KOOTENAI DEVELOPMENT IMPOUNDMENT DAM

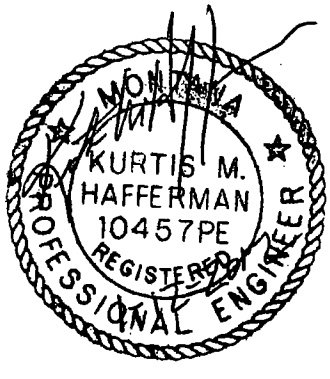
OCTOBER 2011 ROUTINE OWNERS INSPECTION

Prepared for: The Remedium Group

Prepared by: Kurt Hafferman, P.E.

BILLMAYER & HAFFERMAN INC.
2191 3rd Avenue East
Kalispell, Montana 59901

Inspection Date: November 01st, 2011
Report Date: January 12th, 2012



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1.0 OBJECTIVES

The end of October 2011 routine owner's inspection was conducted on Tuesday, November 1st, 2011. Personnel included Kurt Hafferman, P.E. and Dan Nelson from BHI and Jeremy Peterson from Chapman Construction.

The inspection was conducted as a routine owner's inspection. Project tasks to be completed included:

1. Safety meeting with Chapman and BHI
2. Check LRC-06 flows
3. Check Carney Creek and Lower Rainy Creek flows
4. Check Upper Rainy Creek and Fleetwood Creek inflows
5. Read reservoir level
6. Record piezometer readings
7. Inspect the embankment dam
8. Inspect principal spillway
9. Inspect outside and inside of drains
10. Read flumes and weirs below the drain outlets
11. Read staff gauges in all streams above and below drain outlet channel
12. Download transducer data and set transducers to 5 min. recording interval
13. Decontaminate and depart site

2.0 RESULTS

BHI met with Chapman Construction at 10:15 a.m. and the routine owner's inspection began at 10:30 a.m. and was completed at 2:00 p.m. BHI starts inspections later in the fall and winter to give time for it to heat up during the morning as much as possible. The weather was clear and cold, with calm winds. The temperature ranged between 33°F and 40°F. There were no weather impediments that affected the inspection. Copies of photographs from the date of the inspection are included in Appendix 1.

Copies of the Routine Owners Inspection Report as completed after the inspection and copies of the field notes are provided in Appendix 2. The following are the results of each of the thirteen (13) tasks described above;

1. Safety Meeting: Jeremy Peterson has been assigned as the health and safety officer and is responsible for equipment condition, decontamination procedures and over-all KDID site safety. The safety meeting with Chapman Construction included discussions of the work tasks and procedures for the day, equipment safety and operation, emergency procedures, truck traffic onsite, worker health and overall job site safety. Environmental Restoration (ER) is performing year end cleanup operations at the amphitheatre and has staged decontamination equipment onsite. Equipment was checked, no issues were found and all personnel were equipped and prepared for the site conditions. Standard equipment used included: double Tyvek suits, rubber booties, double vinyl gloves

and North® full face mask. Booties were taped at the top and Tyvek suits are taped at the zipper on the outer suit.

2. The LRC-06 flume was checked at the end of the inspection. The flume was clean and clear and a gauge reading was taken and recorded.
3. Carney Creek and Lower Rainy Creek Flows: Flumes CC-02 and LRC-02 respectively were read. Flumes contained trace amounts of sediment, they were cleaned and the stream flows were noted as clear. The flume gauge readings were taken and recorded and are as follows;
    a. The CC-02 Flume was read and the gauge height was recorded at 0.25 ft.
    b. The LRC-02 Flume was read and the gauge height was recorded at 0.46 ft.
4. The Upper Rainy Creek and Fleetwood Creek flumes were read.
    a. The URC-02 Flume was read and the gauge height was recorded at 0.48 feet.
    b. The Fleetwood Creek flume was read and the gauge height was recorded at 0.24 feet.
5. The reservoir level rose in the past month in response to recent precipitation. The gauge reading on the staff gauge in the reservoir was recorded at 1.01 feet.
6. All piezometers were read and recorded and levels are continuing to decline but are flattening in response to seasonal low flows. An update of the piezometer plots is included in Appendix 3.
7. No bulges, erosion or other anomalies and/or changes were noted to the embankment from the upstream face to the toe.
8. The spillway was not running and the entrance channel was dry.
9. Drains were inspected and the flows in the drains and stream channel below the drains were measured and recorded. Water is still flowing in drain 2 but the flow is now receding. Drain flows were all recorded as clear and steady.
10. All weirs and drains were read and recorded, no anomalies were noted. Results are shown in Table 1 below.
11. Gauge height readings from the flumes and weirs in streams and below the toe drains were taken. Results are summarized in Table 1 below.
12. All four (4) transducers onsite were downloaded during the inspection and the transducers were reset to record at 5 minute intervals. Data will be processed and reviewed. As the Spillway is no longer running that transducer has been removed and placed in piezometer A8. A Barologger® was placed onsite to check influence of barometric pressure changes on the surface water readings.
13. Initial personnel and equipment decontamination was conducted at the contamination reduction site with ER pressure washing equipment. Final removal of the inner Tyvek suit and the mask took place at the support trailer.

The readings from all the streams flowing into and off the site, including the flumes, weirs and reservoir levels are compiled in Table 1 below. Table 2 shows the net difference between inflows and outflows on the day of the inspection.

Table 1: Flow Measurement Results

Station	GH Reading (ft.)GH Reading last Month	GH Reading (ft.)GH Reading this Month	GH Reading Difference from last month.	Flow (gpm)/VOL (AF) last Month	Flow (gpm)/ VOL (AF) This Month	Flow/VOL Difference from last month.	Temp °F
URC02	0.38	0.48	+0.10	131 gpm	210 gpm	+79.4 gpm	31°
Fleetwood Creek	0.18	0.24	+0.06	20.7 gpm	37.1 gpm	+16.4 gpm	39°
Reservoir	0.77	1.01	+0.24	22.6 AF	26.7 AF	+4.06 AF	25°
F 1-2-3-4	0.15	0.14	-0.01	14.5 gpm	12.7 gpm	-1.8 gpm	33°
W 5	0.13	0.104	-0.021	6.43 gpm	4.08 gpm	-2.35 gpm	36°
D6	0.95	0.948	+0.0	102 gpm	102 gpm	+0.0 gpm	41°
F 7-8	0.11	0.10	-0.01	5.48 gpm	4.53 gpm	-0.95 gpm	41°
W 12	0.26	0.239	-0.021	39.6 gpm	32.1 gpm	-7.46 gpm	45°
F -Seep	0.15			22.7 gpm			
LRC01	0.22	0.20	-0.02	450 gpm	418 gpm	-32 gpm	45°
CC02	0.15	0.25	+0.10	76.3 gpm	166 gpm	+89.8	34°
LRC02	0.44	0.46	+0.02	497 gpm	532 gpm	+35 gpm	33°
LRC06	0.55	0.56	+0.01	702 gpm	722 gpm	+20 gpm	
Spillway	0.00	0.00	+0.0	0 gpm	0 gpm	0 gpm	

Table 2: Total Flows

Total Flows	
Inflows Above Reservoir at URC02 and Fleetwood Creek	247 gpm
Outflow Below Reservoir above CC02	418 gpm
Difference (Outflows greater than inflows)	+171 gpm

3.0 DISCUSSION

3.1 Weather Updates

The precipitation in this area as of November 1st, 2011 is reported as 148% of normal at the Banfield Mountain recording site which is located just northwest of the project. The USGS new water year started on October 1, 2011. As of October 1st, 2011, in the vicinity of the project, precipitation is above normal. The entire Kootenai drainage basin shows precipitation levels at 162% of normal.

The temperatures in the past month have ranged from a low of 18°F to a high of 74°F and there has been 3.7 inches of precipitation since the September inspection.

3.2 Site Access

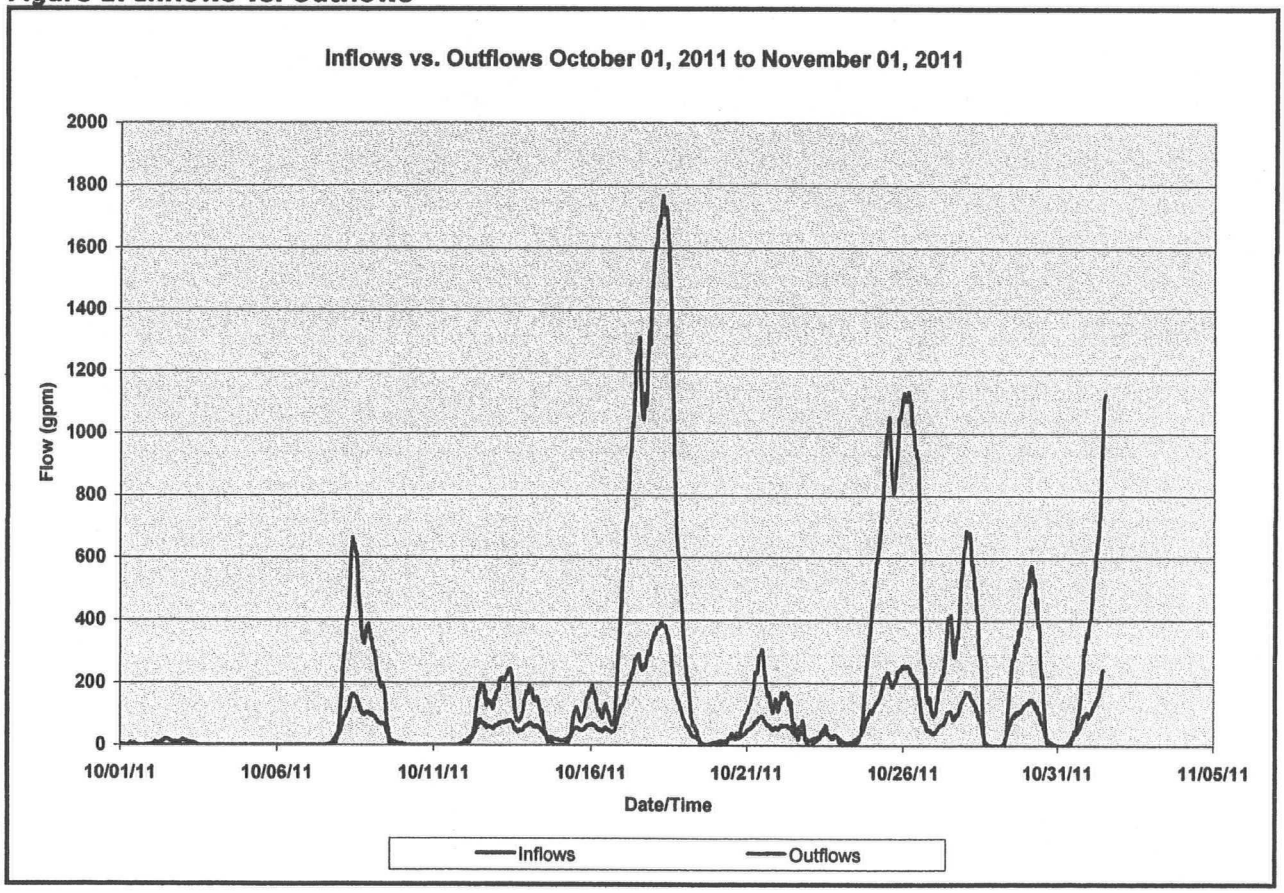
Access to the site was obtained with the Ranger ATV. Jeremy Peterson was the onsite health and safety, equipment and personnel safety officer. Jeremy was the means of transportation while Mr. Hafferman and Mr. Nelson carried out the inspection. ER is performing year-end cleanup operations onsite to remove equipment from the contamination zone. No trucks are hauling contaminated materials and the entrance shack is no longer manned. BHI and Chapman Construction have set up a preliminary protocol to follow for winter weather travel on sit. Winter weather is considered when temperatures drop below 32°F during any time of the day when

inspections typically occur. As winter weather is upon northwest Montana, the cold weather related personnel, equipment and decontamination protocol established by BHI and Chapman Construction is in effect. Winter protocol requires that a survival blanket is to be carried at all times, a small first aid kit is to be available, two-way radios are to be carried by Dan and Kurt and a fully charged cell telephone is in the ATV. The health of each of the personnel is questioned and each person is required to declare that they are fit on that day to take on the rigors expected to be encountered, including unexpected dangers. The safety and health of the personnel is noted in the field book to provide documented and acceptable procedures for the different conditions and limitations encountered on the site.

3.3 Surface Water Flows

Inflows into the reservoir showed a continued decline through the summer season in conjunction with drying conditions. The early fall has been wetter than recent months and has resulted in increased flows over the past month. The inflow from Upper Rainy Creek was recorded at 210 gpm and Fleetwood Creek was recorded at 37.1 gpm for a total reservoir inflow of 247 gpm on November 1st. Measured inflows in October show a 63% increase over the flows measured in September. Inflow volume over the past month was measured at 8.57 AF and outflow volume at LRC-01 measured 12.3 AF, or 3.7 AF more outflow than inflow, according to transducer data. Figure 1 below compares surface water inflows and outflows since June 23rd.

Figure 1: Inflows vs. Outflows

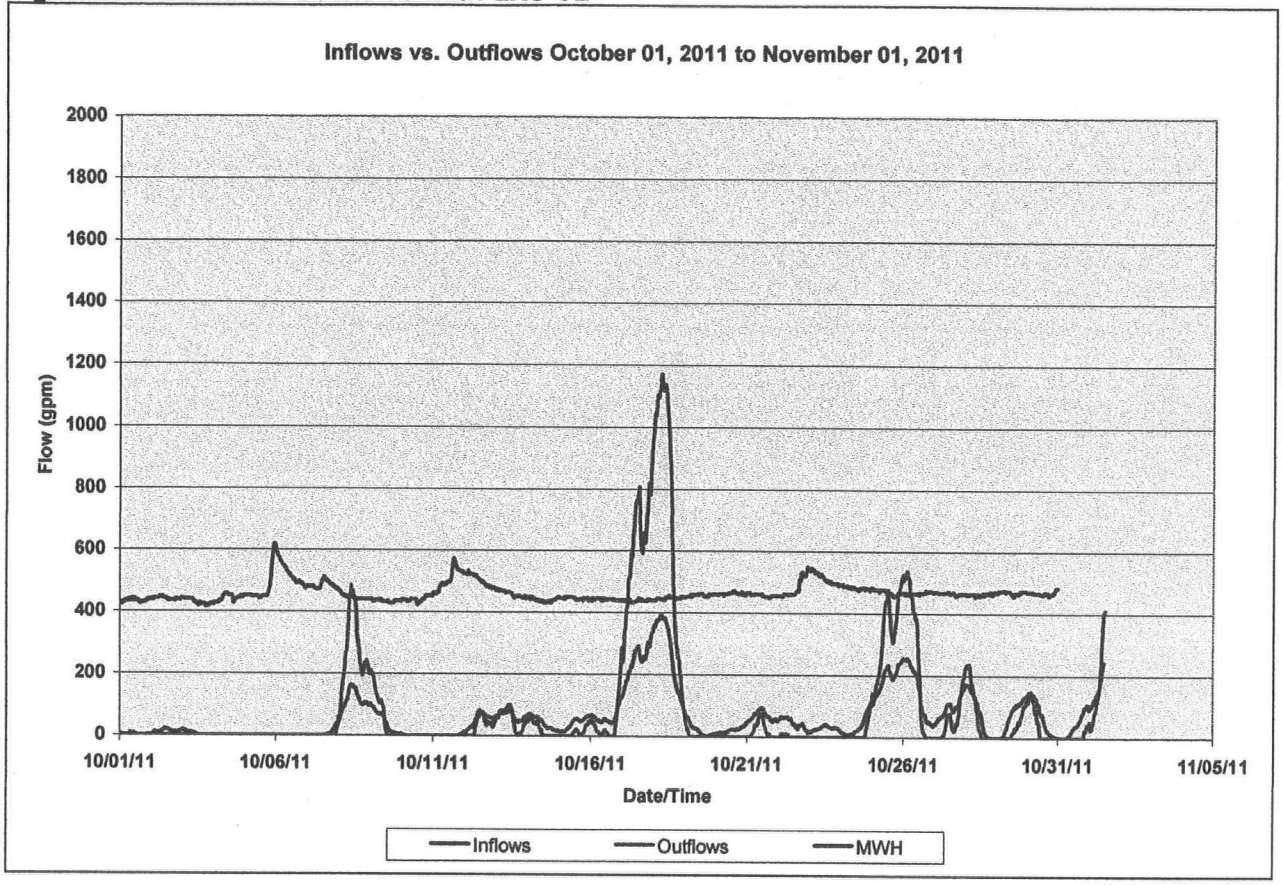


Review of transducer data this month revealed a similar inflow-outflow pattern as in past months. However the data collected over the past month indicated that inflows and outflows reached zero gallons per minute repeatedly over as shown above; which is not realistic.

After review of other transducer data and making calls to the Solinst® engineers, it was determined that the fluctuations in water levels are assumed to be caused by the more rapid barometric pressure changes that are typical of fall weather patterns in this part of the country and at this elevation. BHI noted to the Solinst® engineers that through the summer months we did not see negative flows or rapid transducer responses and the Solinst® engineers stated that typically summer barometric pressure changes were fairly constant and must have balanced from month to month. As seasonal fluctuations occur, readings should be barometrically adjusted to ensure accuracy and the transducer cleared of data and reset as part of each site visit to minimize the barometric lag effects. BHI purchased a barologger and it was placed onsite to provide readings to make the barometric compensation in next months transducer data. The Solinst® engineers stated that while the uncorrected data does not reflect exactly accurate flows, the magnitude of the data is still relevant and the corrections will be the same for all transducers; upstream and down stream.

Of note in Figure 1 above is that we can continue to see that outflows exceed inflows. Inflows include Upper Rainy Creek and calculated Fleetwood Creek flows and outflows include toe drains and any groundwater infiltration below the toe of the dam. Based on the data collected outflows exceeded inflows by 30% in October and show continued groundwater influence on the drain system. Figure 2 below shows the inflows and outflows along with the flows recorded at LRC-02 below the mill pond.

Figure 2: Inflows vs. Outflows with LRC-02



The graph above is the same as Figure 1 except it includes the flow data obtained from MWH Global for the LRC-02 flume which sits below the mill pond. LRC-02 is measuring the same water as LRC-01 except for the addition of any additional groundwater discharges and, as previously stated, the Carney Creek flows have been removed in the graph data above. MWH flow data is only collected during spring and summer months each year and data collection ended on October 31, 2011. MWH data is collected by ISCO samplers and should not be subject to barometric changes at the site.

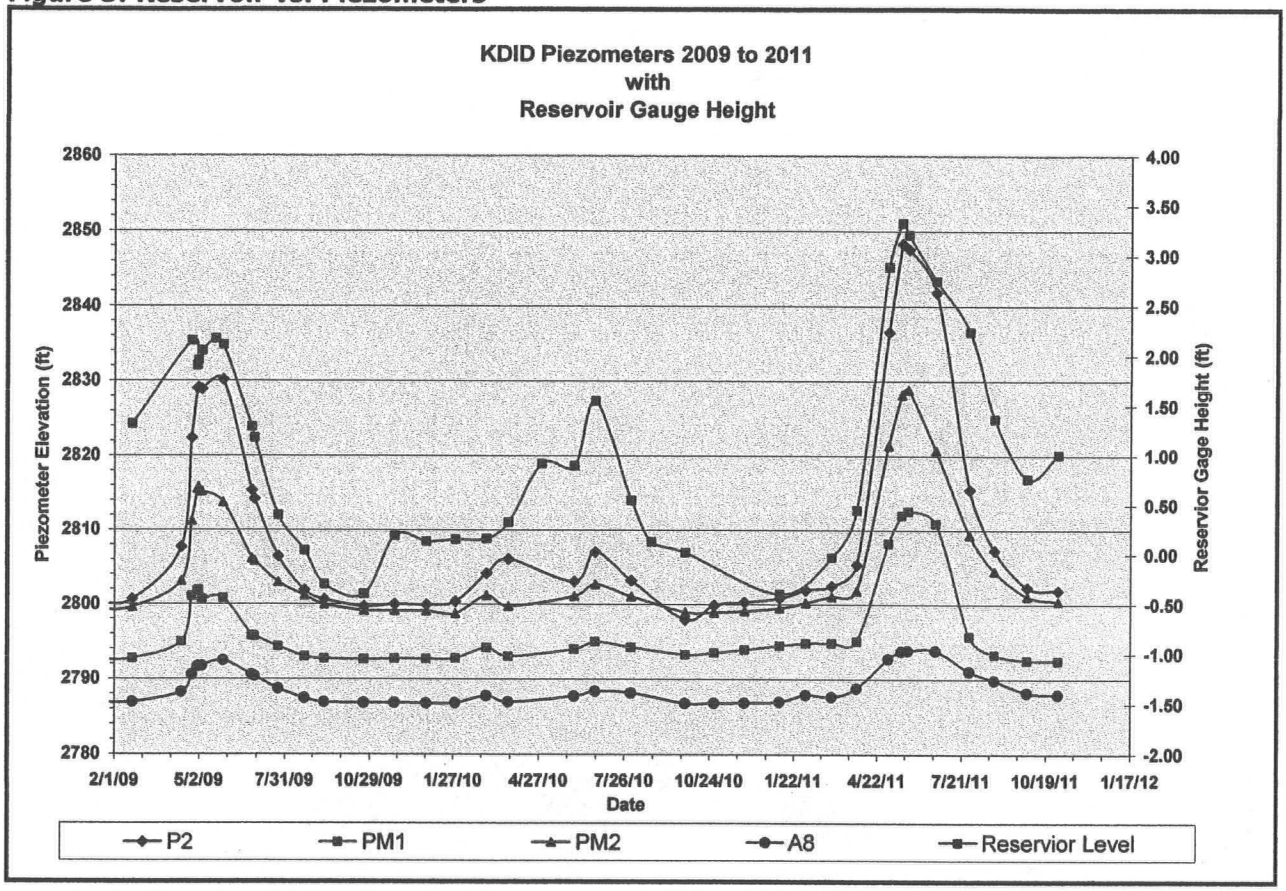
The MWH data indicates that outflows from the dam were 31 AF from October 01, 2011 to October 31, 2011 as compared to the 12.1 AF calculated at LRC-01 by BHI and as further compared to the 8.6 AF of total surface water inflows. The flow measurements at the MWH ISCO sampler at LRC-02, as they do not require barometric pressure compensation, likely provide the most accurate measurement of flow rates and flow volumes. As can be seen, both the BHI data and the MWH data show a significantly greater volume of water flowing below the KDID embankment than flows in surface water from Upper Rainy Creek.

3.5 Reservoir

As with surface water flows, the reservoir level increased over the past month after declining flows through the summer months. The gauge height reading this month showed a reservoir level of 1.01 feet and the water surface was approximately 400 feet from the upstream toe of the crest of the dam on the date of this inspection. The

reservoir is now approximately 1.3 feet higher than has been normally recorded by BHI for this time of year. Figure 3 below shows the updated reservoir level and is contrasted by the piezometer readings.

Figure 3: Reservoir vs. Piezometers



As shown above, the reservoir had been falling and all the piezometer levels are flattening as is typical for this time of year. The reservoir level, just like the piezometer levels are still approximately 1 foot higher than has been normally recorded by BHI for this time of year. Reservoir levels at this time of year are typically near 0.00 feet on the staff gauge or below and have never been noted to show a rise in levels in October. We typically do not see any rises until near December as shown in 2009 in the graph above. With the exception of 2010, the reservoir level does not generally fluctuate significantly from December to May when spring runoff begins. If the current reservoir level is sustained through the winter, and the wetter conditions persist, then spillway flows next spring could be higher than this year because of the higher pre-runoff reservoir level.

3.6 Spillway

No changes in the spillway have been noted in the past month. Photos of the centerline cracks were taken during this inspection and show no significant changes since spring runoff occurred this spring. There is some debris accumulation occurring but nothing that will hinder flows if they were to occur.

3.7 Drains and Drain Flows

All flows were noted as clear and steady with no visible transport of sediment in the drain water. Small root wads continue to be noted in a few of the drains on the project but do not appear to pose an immediate threat to drain flows. If they do not wash out before spring flows, an effort should be made to remove them.

Flows in drain 1 have ceased for the season. Drain 2 is still running with a slight decline in flows over last month. We still continue to see the black sediment globs that have been noted at the outlet of the drain.

Drain 5 is still sustaining higher flows than normal at this time and based on data this year, has possibly increased capacity due to flushing of the pipe as a result of the sustained high flows. While drain 5 flows are small in comparison to other drains, its reaction to this years high flows has been interesting and indicates changes occurred within the embankment.

Drain 6 was recorded at 102.2 gpm, showing no change in flows over the past month. Drain 6 flows accounted for 41.4% of surface water inflows measured this month onsite and flows are at normal levels for this time of year.

Flow has discontinued in drain 7 but seepage is still being noted in the gravel below the drain pipe. The gauge height on flume 7-8 shows a 0.01 foot decrease over last month. Drain 8 continues at low flows and it is estimated that 90% of the flows through flume 7-8 is from the seepage below drain 7, not drain 8 flows.

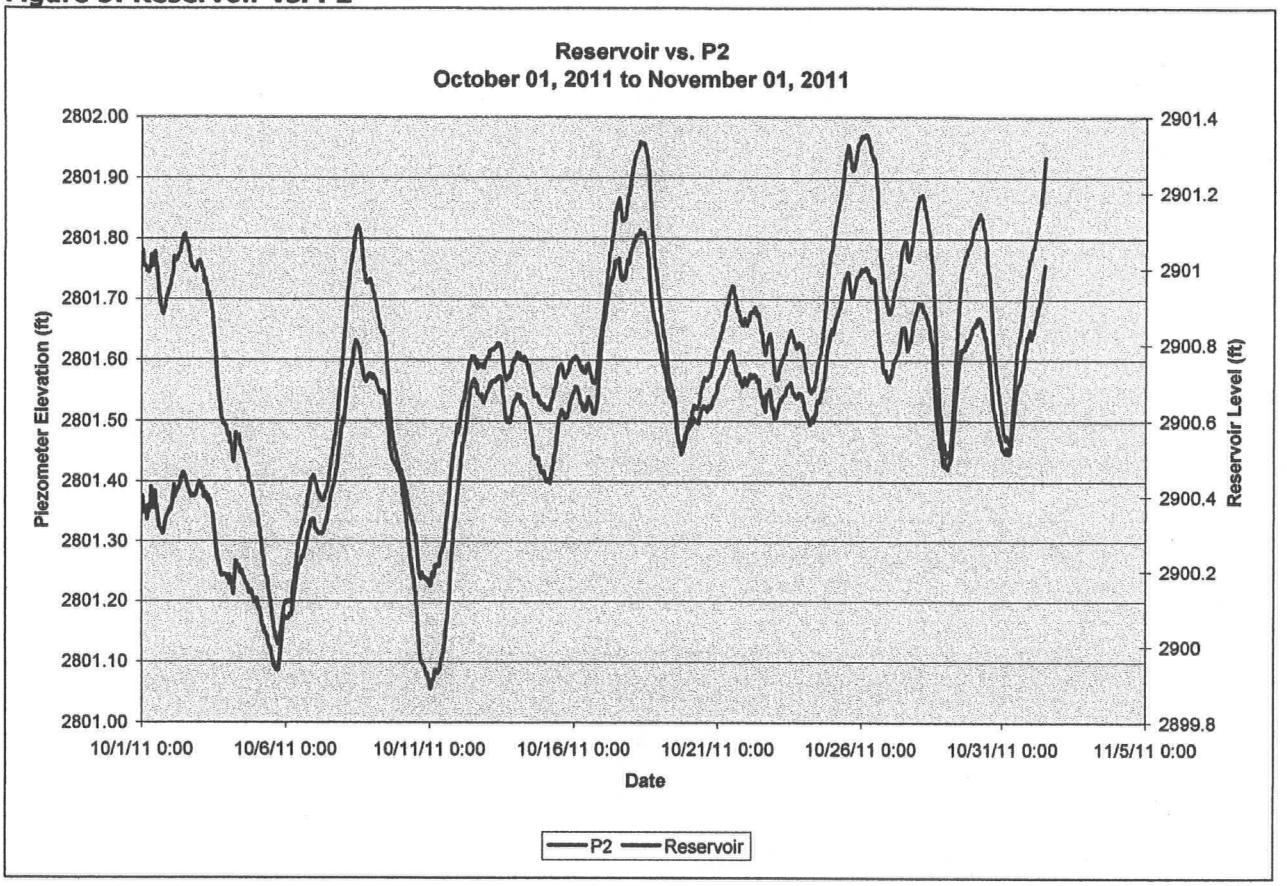
Drain 12 has also reduced flows since last month but flows are still greater than any past flows measured for this time of year.

3.8 Piezometers

Piezometer phreatic water surface readings have continued to decline but are stabilizing at seasonal low levels. Phreatic water surface readings are still 1 to 2 feet higher than past BHI measurements for this time of year.

The Piezometer P2 transducer was downloaded during this inspection along with the other transducers and plotted against the reservoir to check for adverse changes or correlations. Figure 5 below shows this graph.

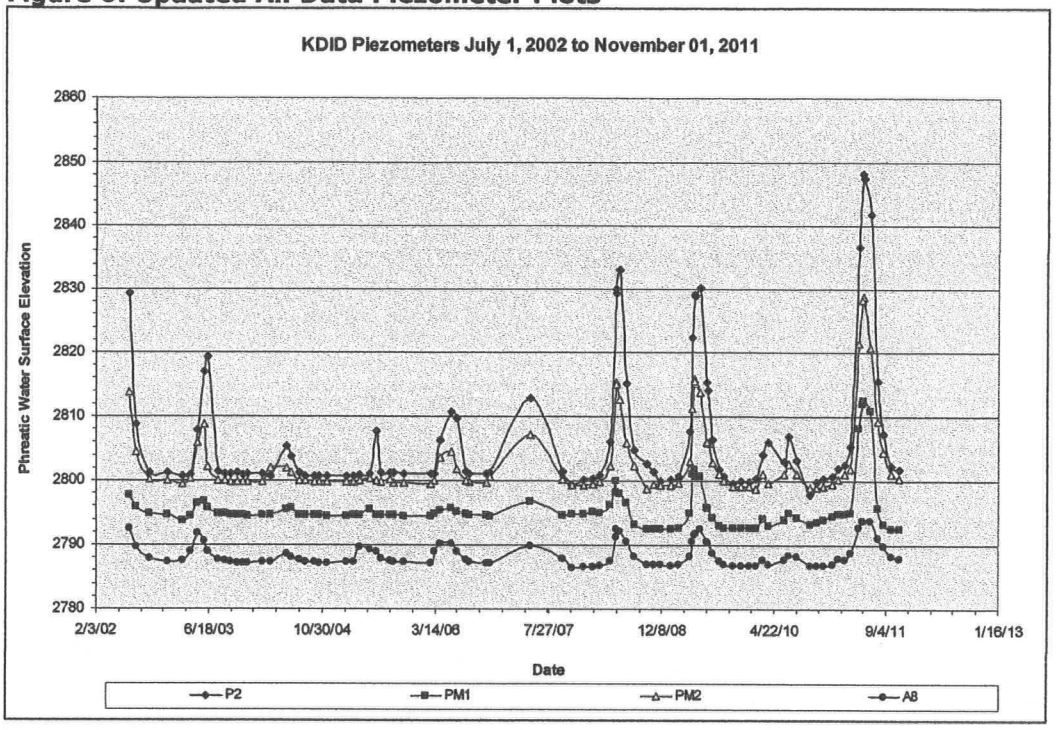
Figure 5: Reservoir vs. P2



The graph above, as in previous months, shows piezometer reactions are unnaturally similar to reservoir changes. Although the elevations and reservoir variations of 0.8 feet are not that unusual for time of year, the unusual part is the changes in reservoir level and the supposed phreatic water surface track so close with no apparent lag time. The graph above, as with all the on-site transducer readings above and below the reservoir, indicates, as discussed above, that there are barometric pressure influences. We know that the beginning and ending measurements are correct as they are taken manually by BHI, but the intermediate readings need to be corrected to remove barometric influences as suggested by the Solinst® engineers. The barologger placed this month will confirm the interaction with barometric pressure and reservoir level readings in next month's readings.

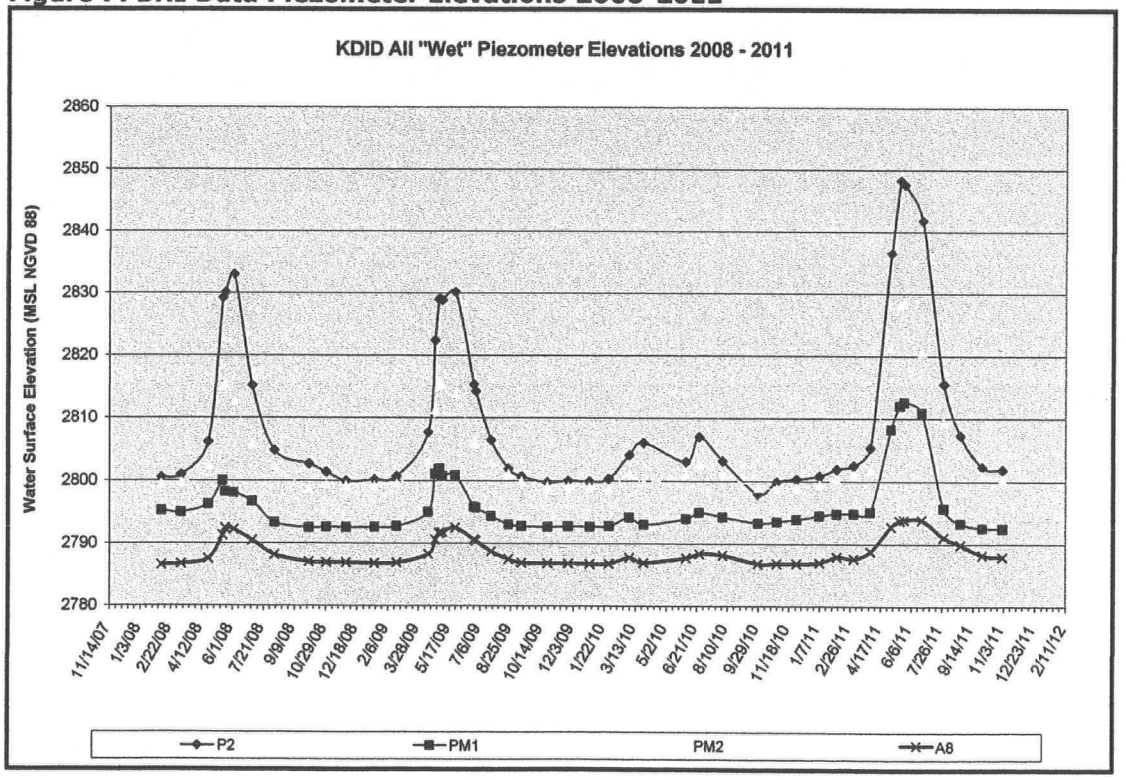
The updated piezometer plots that include all of the data from 2002 to the date of this inspection are shown in Figure 6 below.

Figure 6: Updated All Data Piezometer Plots



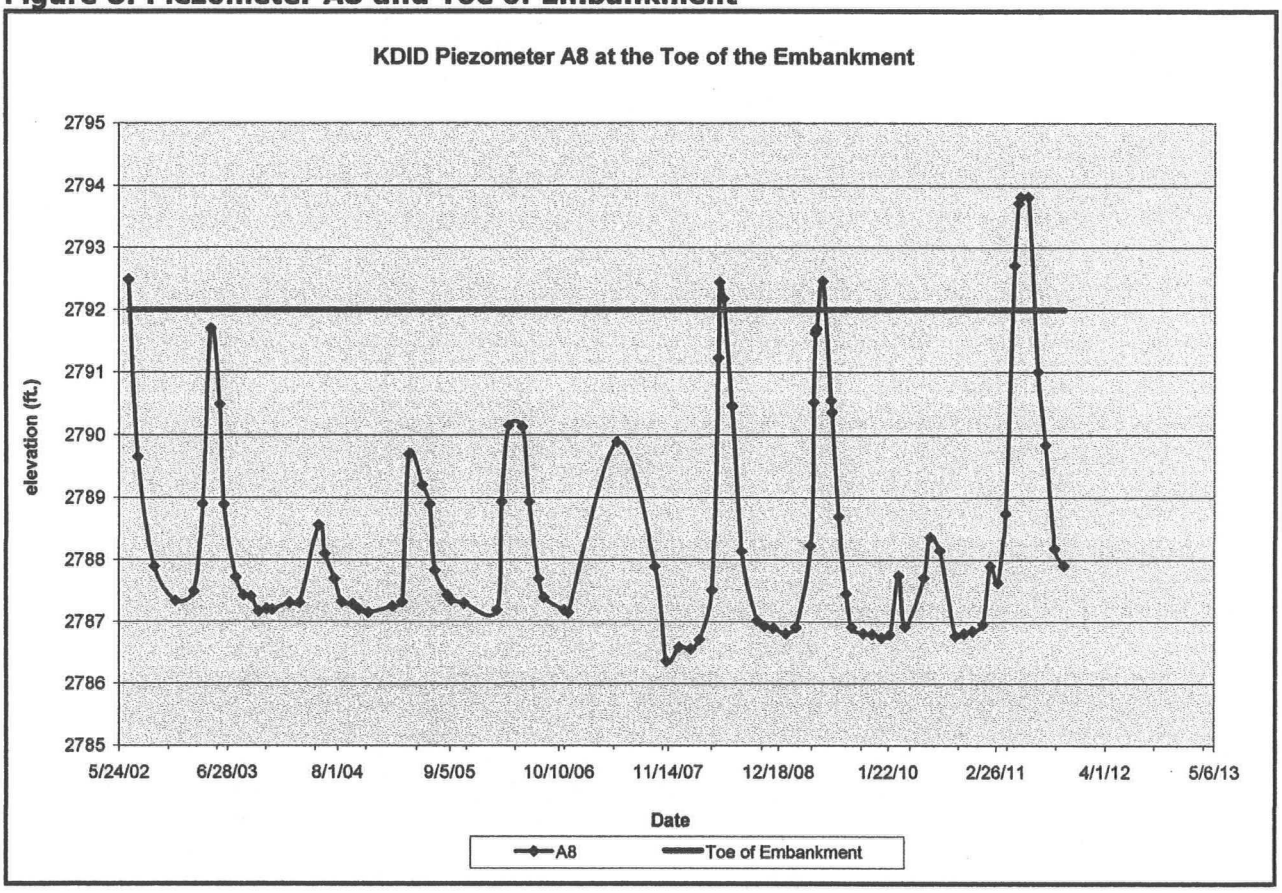
The graph above shows that the phreatic water surface is returning to seasonally stabilized levels and the annual cyclic changes that occur on the project are reoccurring. Figure 7 below shows the same piezometers, but only includes the data gathered by BHI over a shorter period of time.

Figure 7: BHI Data Piezometer Elevations 2008-2011



The graph above continues to show that piezometer A8 is dropping slower than the other piezometers on the site and shows the phreatic water surface at the toe of the dam is still higher than has been previously recorded. Water levels this year at A8 have risen higher and fallen slower than past years and indicate the volume of groundwater still present and moving below the dam. Figure 8 below shows piezometer A8 with the toe of the dam.

Figure 8: Piezometer A8 and Toe of Embankment



4.0 HAZWOPER UPDATES

BHI continues to conduct safety meetings at the beginning of each inspection. All personnel have current certifications, equipment is maintained in good working condition and we have no personnel issues at this time.

The ATV and all equipment are washed with pressure washing equipment supplied by ER. As ER was performing final equipment cleaning and decontamination at the amphitheatre, this will be the last time ER equipment will be utilized for decontamination until spring when hauling operations resume. The equipment decontamination was completed successfully without malfunction, outer Tyvek suits were removed at the contamination reduction area. Personnel then proceeded to the support trailer to complete the decontamination and depart.

5.0 CONCLUSION

No anomalies in the alignment of the dam were noted. No bulges, surface erosion or other physical sign of failure were noted on the site. The spillways are all in good to excellent condition and have no blockages or repair required. Generally reservoir water surface and phreatic water surface readings recorded continue to lag about 1 month behind normal levels when compared to past BHI readings on the site.

Outflows at the toe of the dam continue to be greater than inflows. Surface water inflows only accounted for 59% of the outflows on the date of the inspection and 70% of the total volume over the past month. Flow readings above and below the dam over the past month likely need to be corrected to be accurate due to barometric pressure influence; so exact calculations have not been completed. MWH data at LRC-02 indicates outflows from the KDID below LRC-01 totaled 30.7 AF and is considered reasonable based on measured data on site. It is assumed that if the flow data is corrected for barometric changes that there will be an even greater outflow volume than inflow; as is evidenced by the MWH readings.

The reservoir level increased 0.24 feet which is interesting since levels don't usually increase in the fall and almost never rise until spring runoff begins. The rise in reservoir water level is an indication of the precipitation received at the site over the past month which is above normal.

As discussed in previous reports, transducer data above and below the reservoir continues to show that inflows and outflows are in some way immediately and directly connected, because there is still no measurable lag time between upstream flow fluctuations and downstream flow fluctuations within the 30 minute interval of the transducer readings.

Transducer readings were set this month to 5 minute intervals next month to check if a measurable lag time can be seen in the transducer data. Also a barologger will be installed and will allow the correction of barometric pressure influences that are occurring onsite.

RECOMMENDATIONS

No new recommendations at this time. Recommendations from past reports are included below.

1. Investigate Pond Area: The rapid draining of the pond west of the access road should be investigated to determine first, why it occurred and second, what the repercussions of this event have on the long-term stability of the dam. Questions to be answered during this investigation are; where the intake structure is for the previously discussed Phase 5 decant tower and is it affecting the pond elevation and are there other sources feeding the pond and how are they related to fluctuation in the reservoir level.

2. Drain Flows and Piezometers: Continued monitoring of all previously established monitoring devices throughout the site in order to identify relationships in water level fluctuation and their potential impact on the dam.

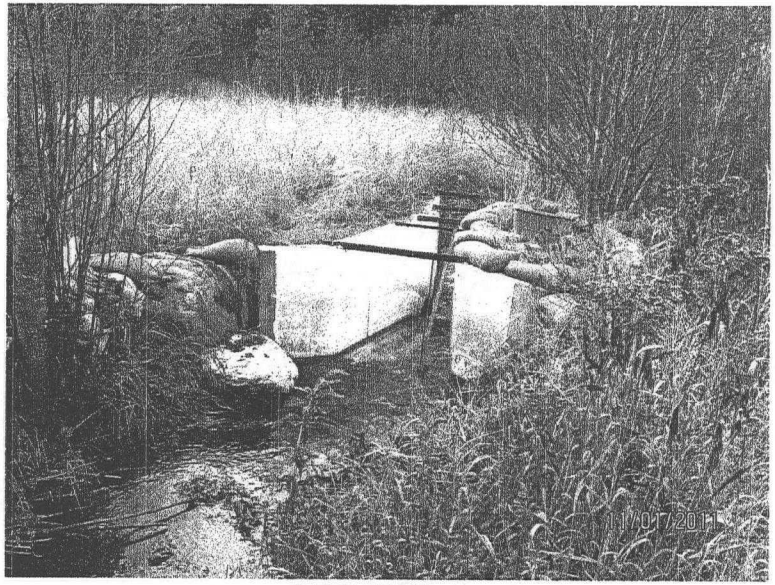
3. Investigate Groundwater: The recent findings that show roughly 50% of drain flow is groundwater should be investigated. The characteristics of this groundwater aquifer below the dam and above it should be determined. This investigation would include a drilling program at the toe and crest of the dam as well as upstream of the impoundment to determine its limits and how it interacts with the dam and surface water flows. Cased holes should be left at select drilling locations to allow aquifer testing.

4. Winter Decontamination: Winter weather is upon northwest Montana so the cold weather related personnel, equipment and decontamination protocol established by BHI and Chapman Construction is in effect. Winter survival gear is to be carried at all times, two-way radios are carried as well as a fully charge cell telephone. The health of the personnel is questioned and each person is required to declare that they are fit on that day to take on the rigors expected to be encountered including unexpected dangers. The safety and health of the personnel is noted to provide documented and acceptable procedures for the different conditions and limitations encountered on the site.

APPENDIX 1

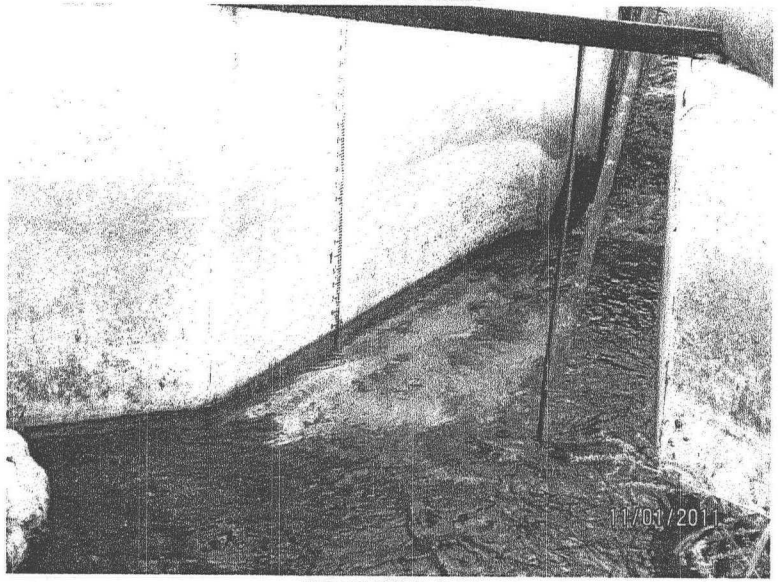
SITE PHOTOGRAPHS

CC-02 Flume



LRC-02 Flume

CC-02 Inlet



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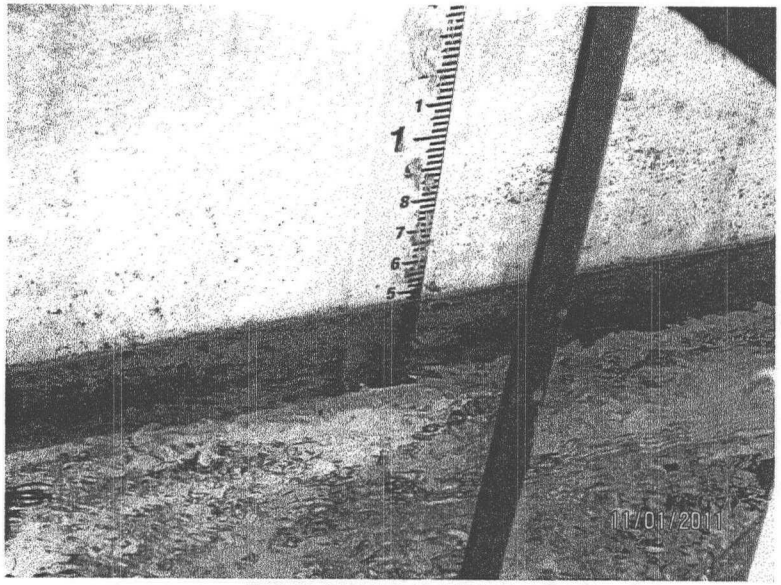
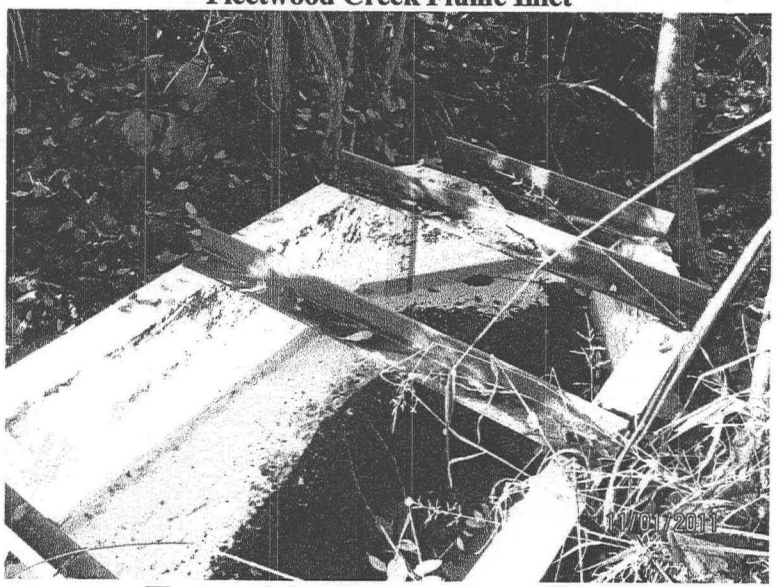


LRC-02 Gauge Height

Fleetwood Creek Flume Inlet

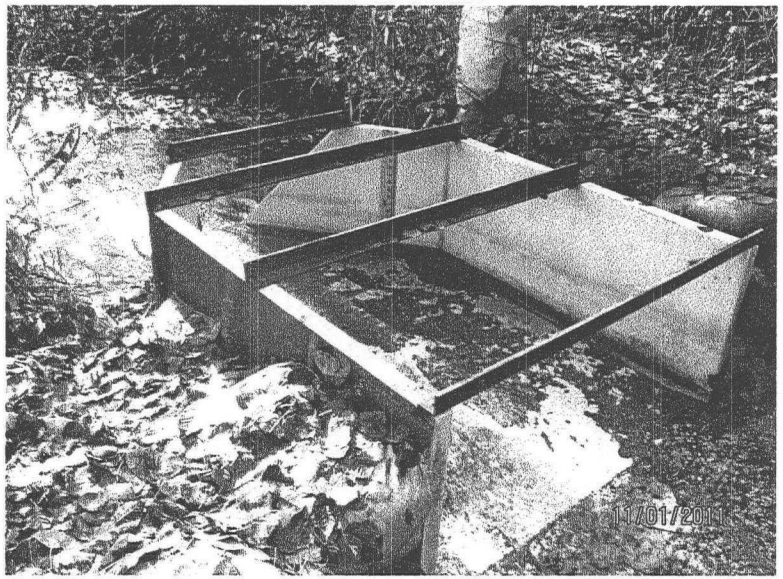
Fleetwood Creek



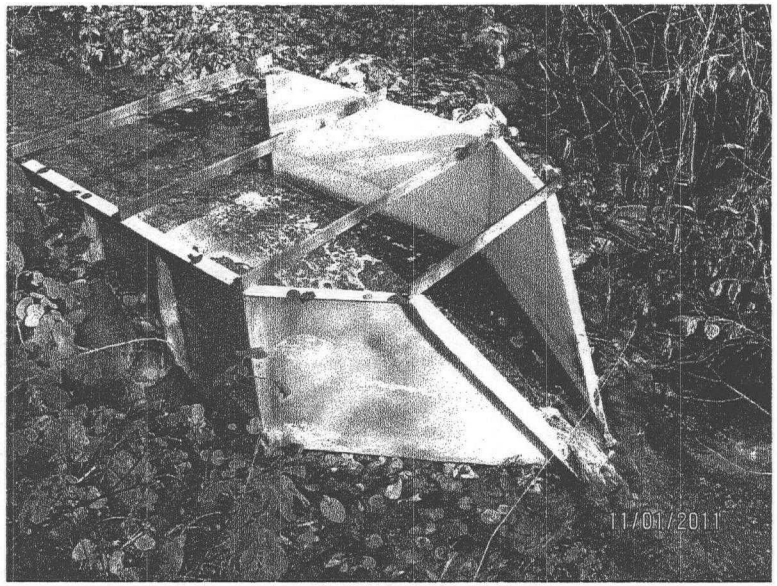
Fleetwood Creek Flume Gauge Height

2191 Third Ave. East • P.O. Box 1139 Kalispell, MT 59903-1139 Phone: 406-257-8708 Fax: 406-257-8710

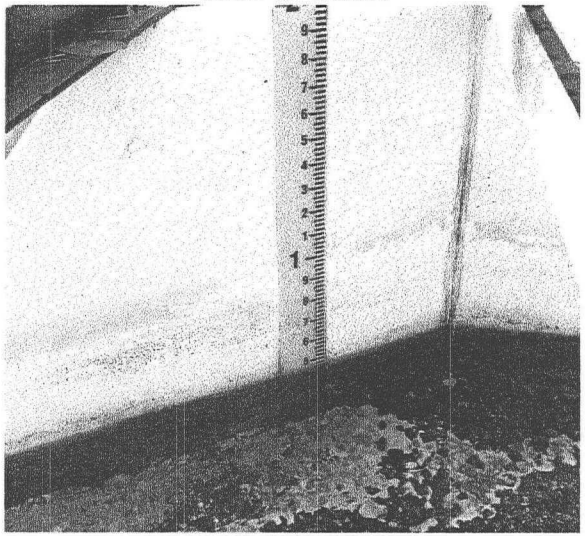
URC-02 Flume



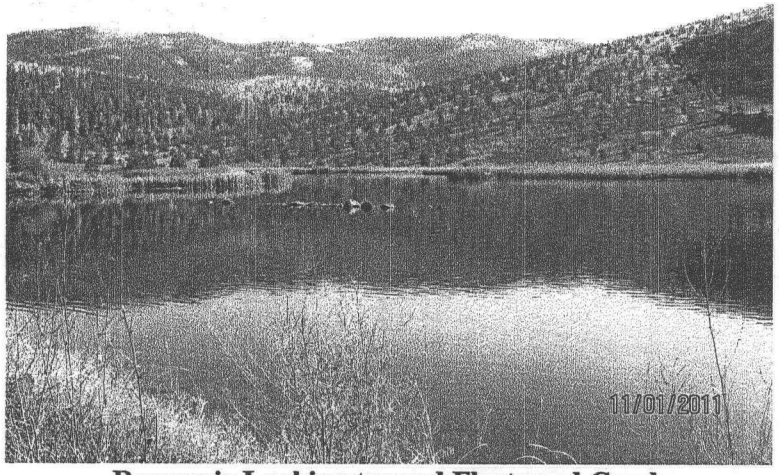
URC-02 Inlet



URC-02 Outlet

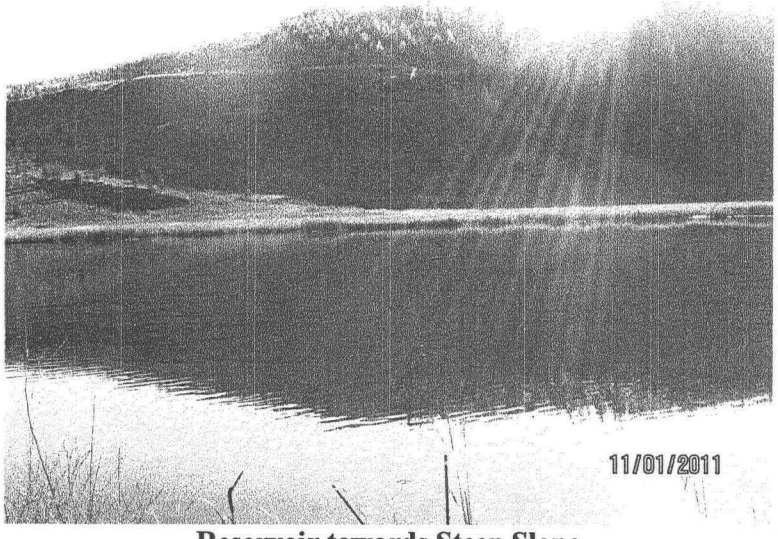


URC-02 Gauge Height

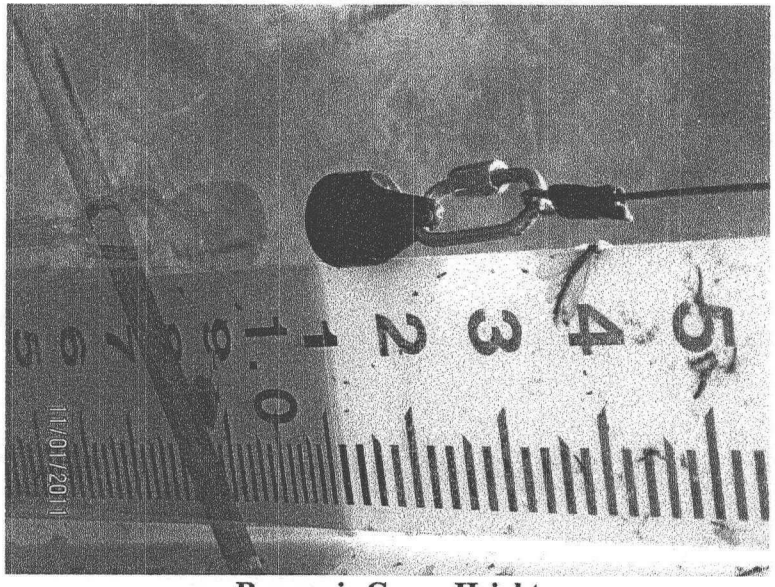


Reservoir Looking toward Fleetwood Creek

Reservoir towards Embankment Dam



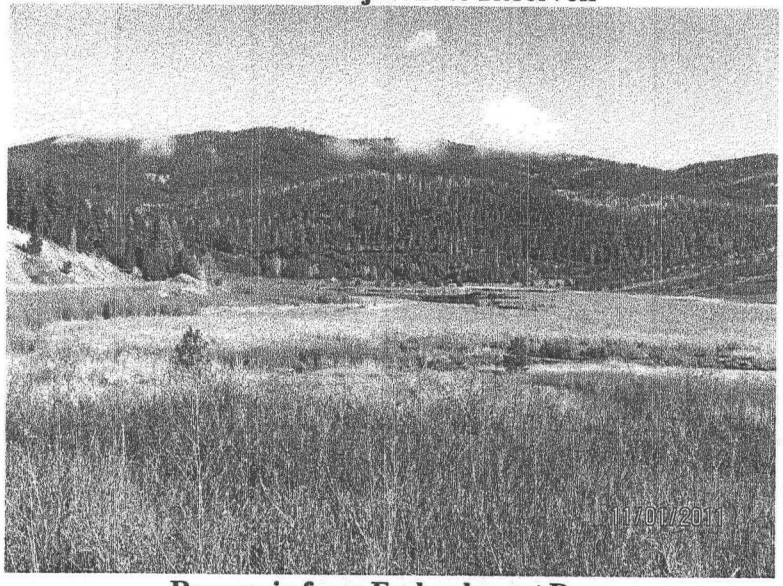
Reservoir towards Steep Slope



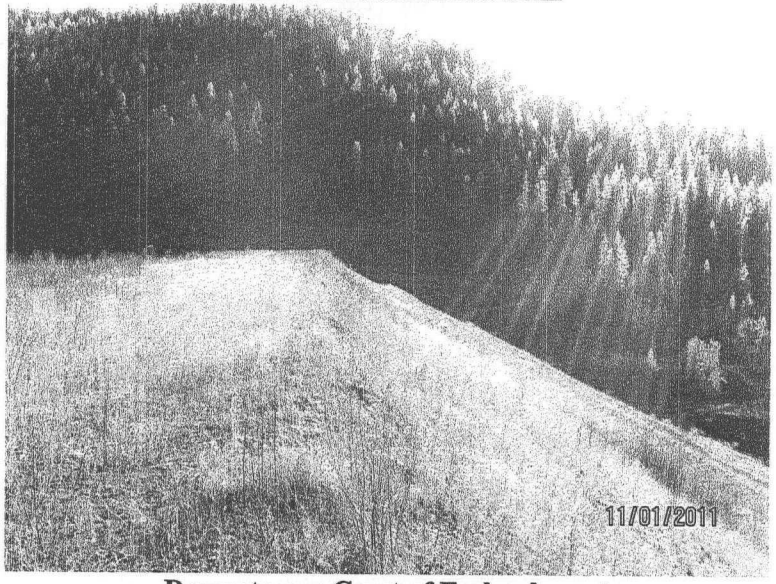
Reservoir Gauge Height

Pond area Adjacent to Reservoir

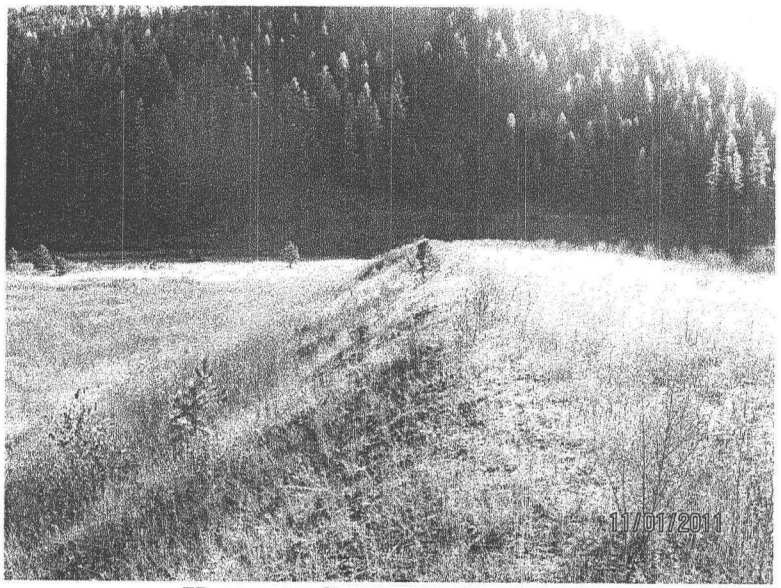
Crest of Embankment Dam



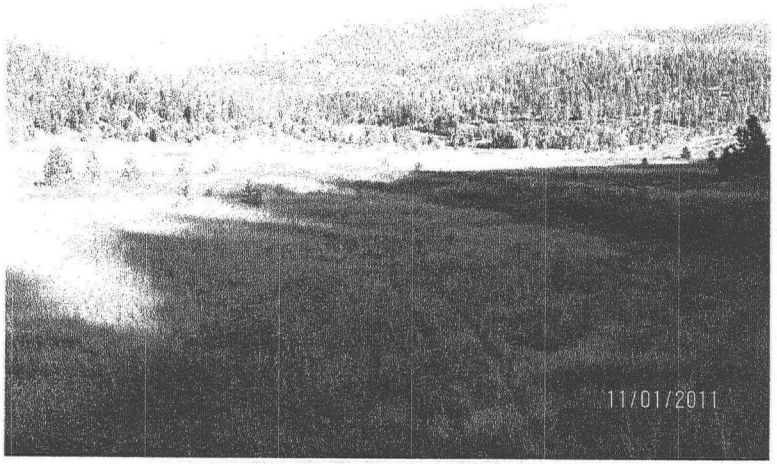
Reservoir from Embankment Dam



Downstream Crest of Embankment

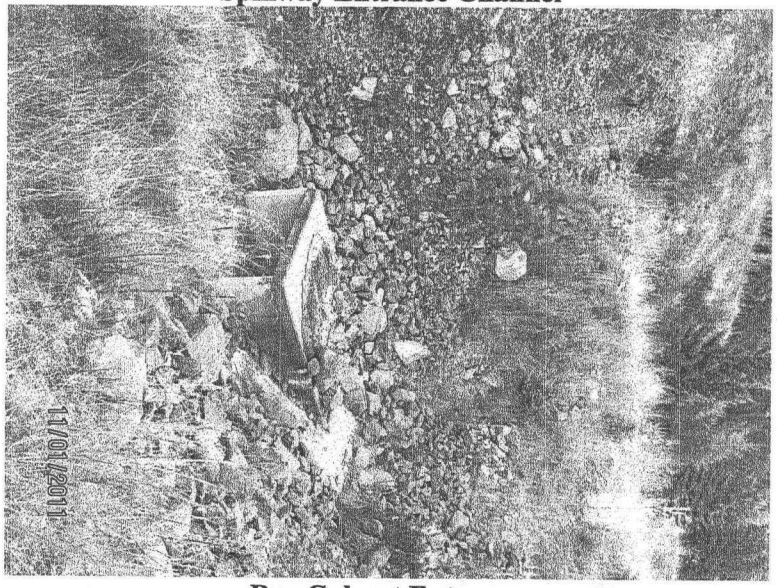


Upstream Crest of Embankment



Spillway Entrance Channel

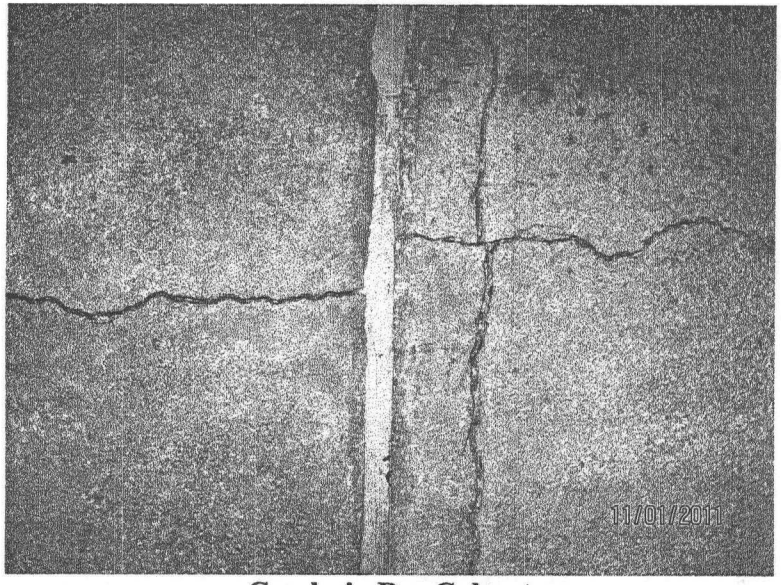
Downstream Face of Embankment



Box Culvert Entrance

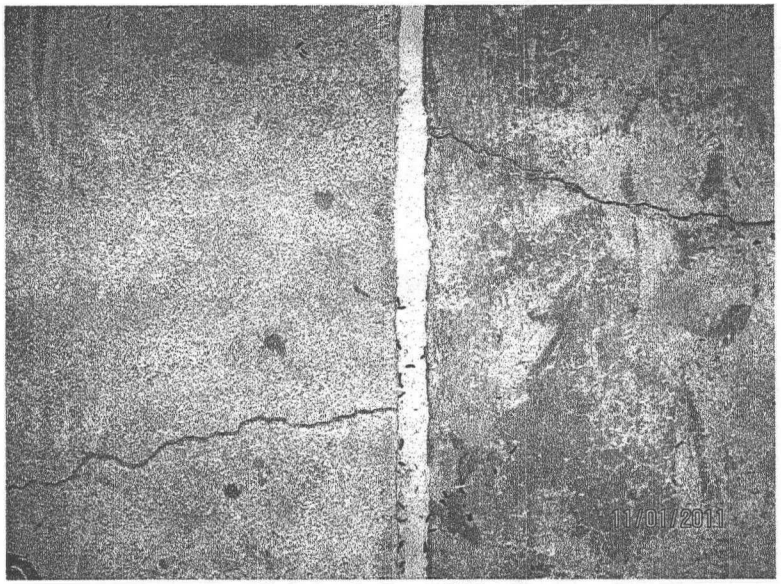
Trash Rack

Cracks in Box Culvert

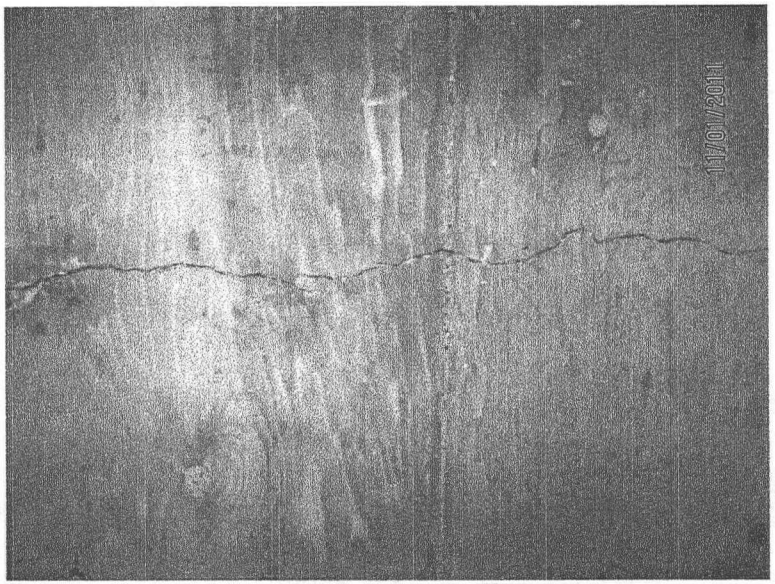


Cracks in Box Culvert

Cracks in Box Culvert

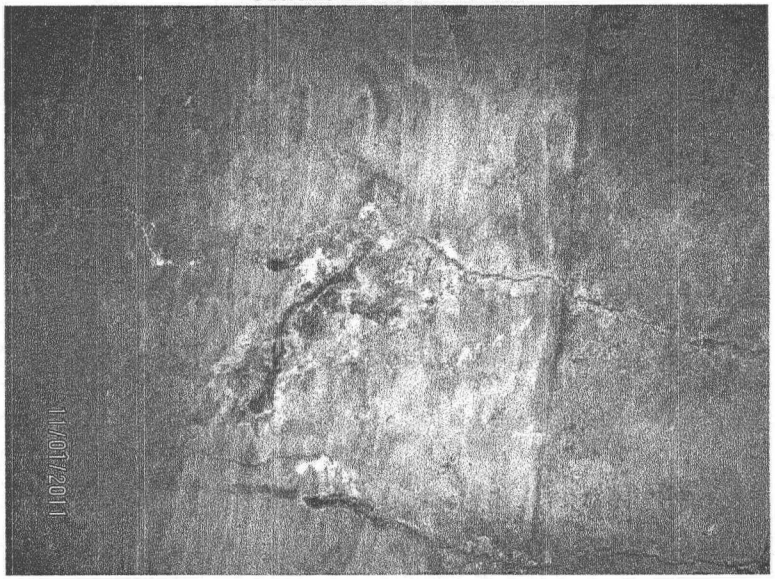


Cracks in Box Culvert



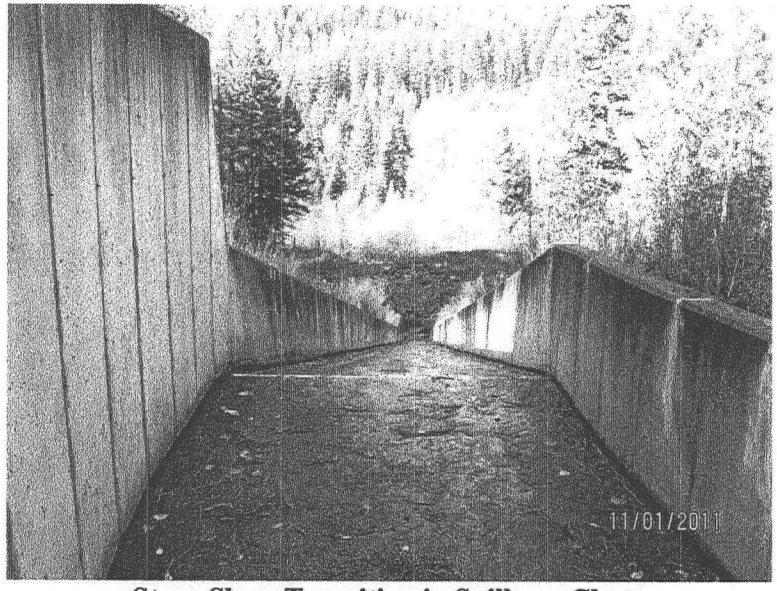
Cracks in Box Culvert

Cracks in Box Culvert

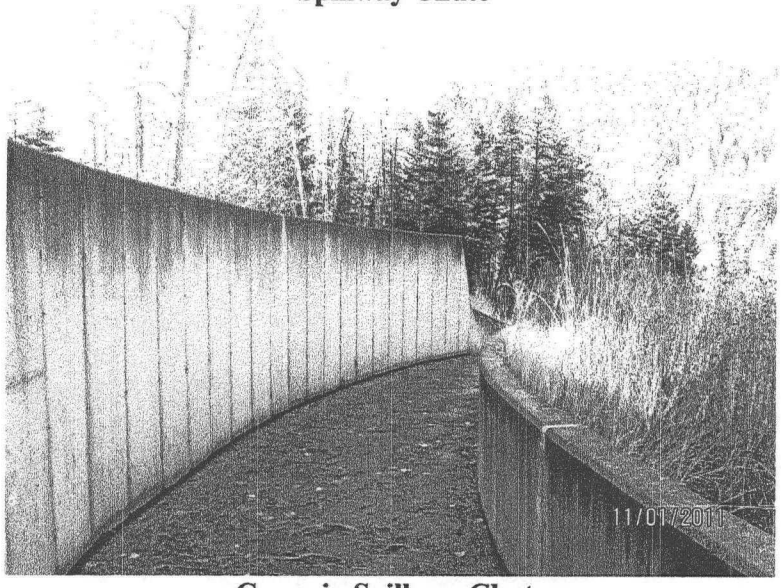


Cracks in Box Culvert

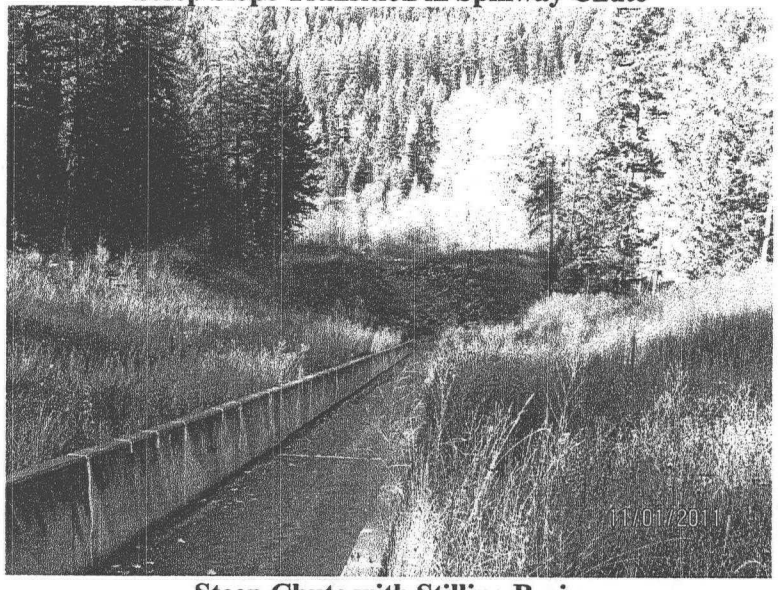
Spillway Chute



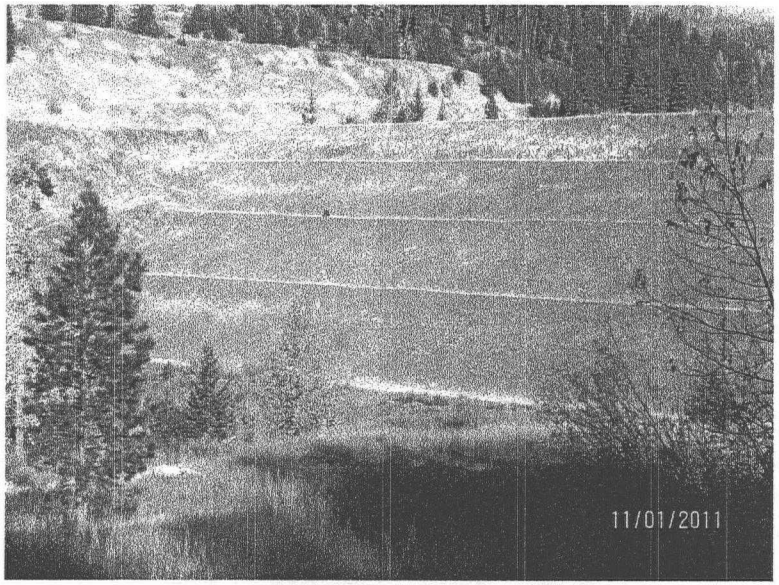
Steep Slope Transition in Spillway Chute



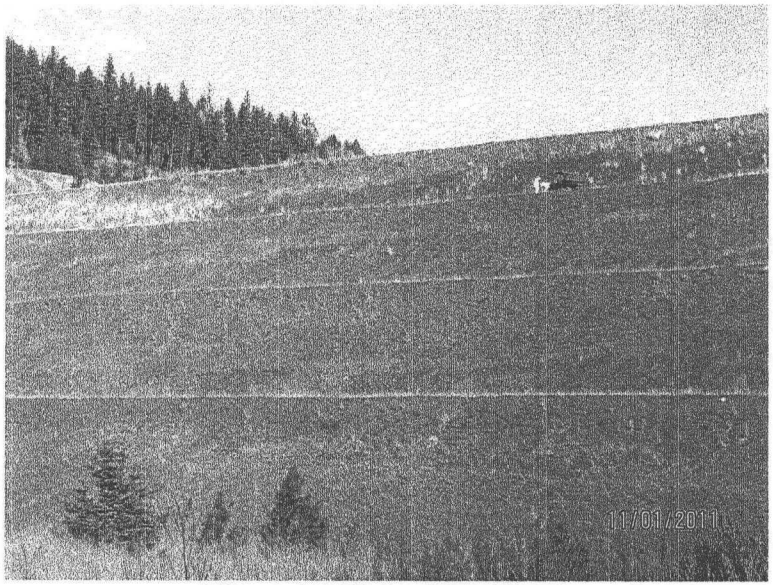
Curve in Spillway Chute



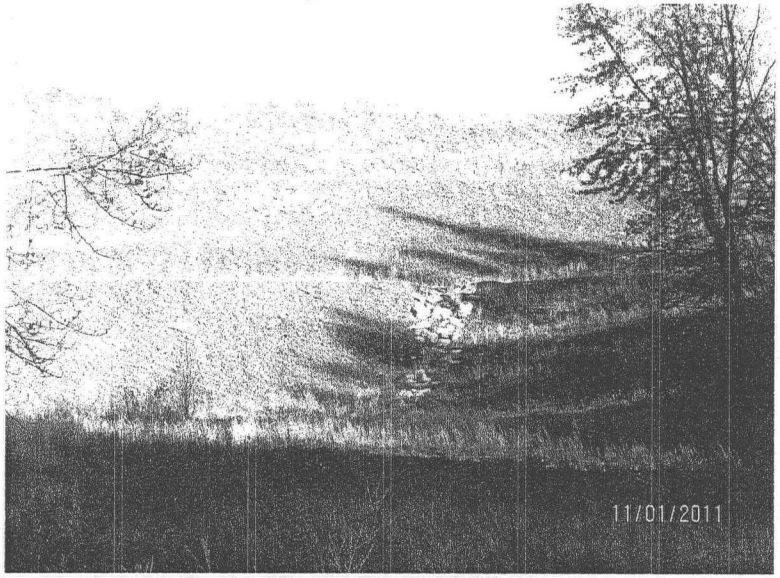
Steep Chute with Stilling Basin



Downstream Face of Embankment



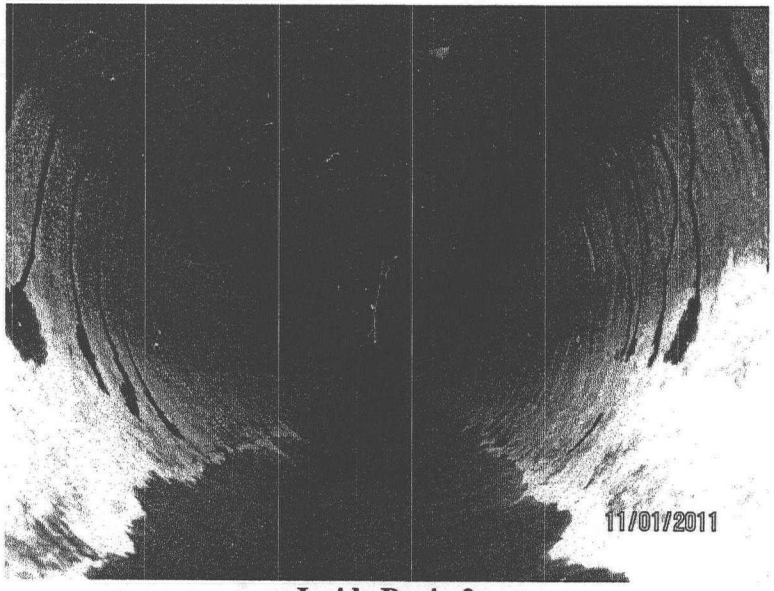
Measuring Piezometer Levels



Drain Channel at Left Abutment

Toe of Embankment Dam

Drains 1 and 2



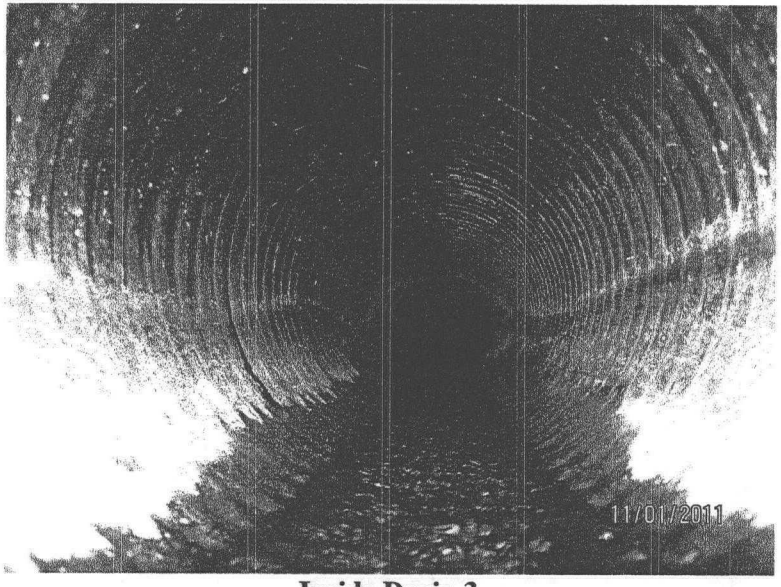
Inside Drain 2

Drain 2

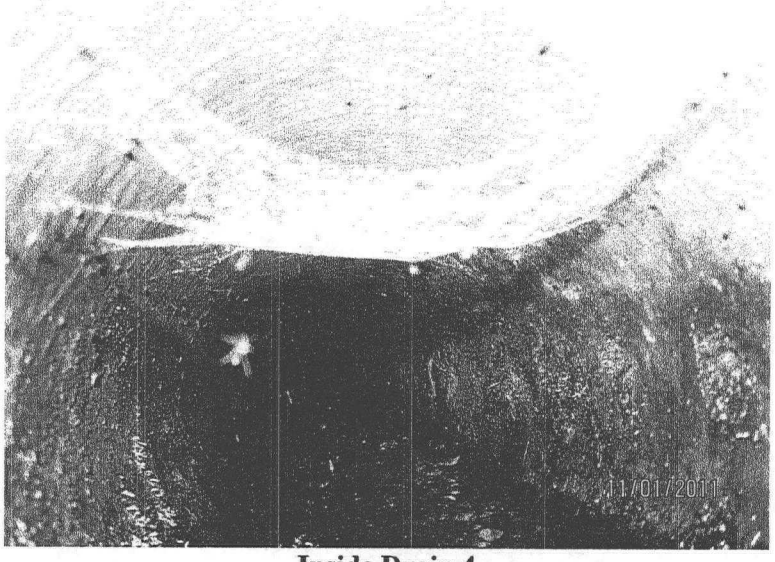
Drain 3 and 4

Drain 3

Drain 4



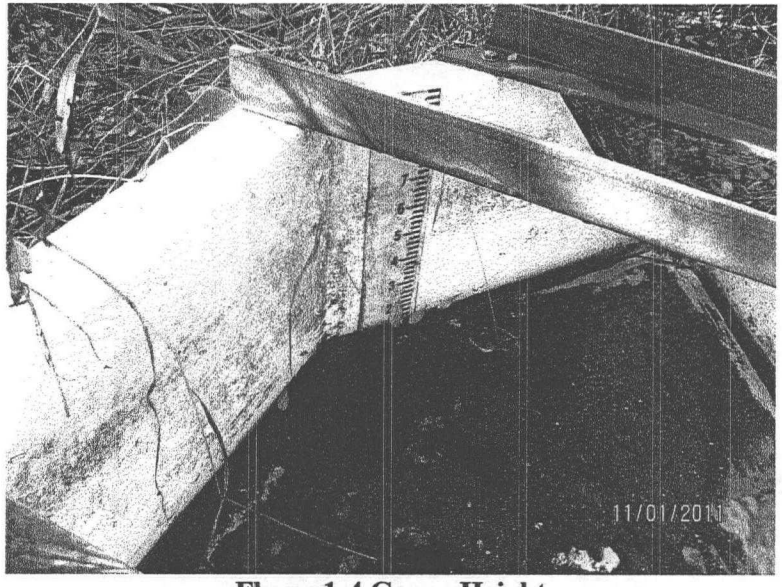
Inside Drain 3



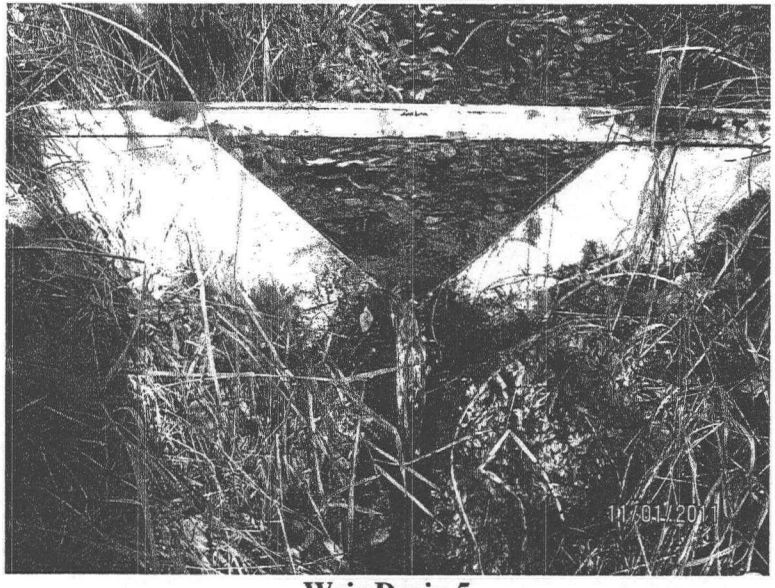
Inside Drain 4

Flume Drains 1-4

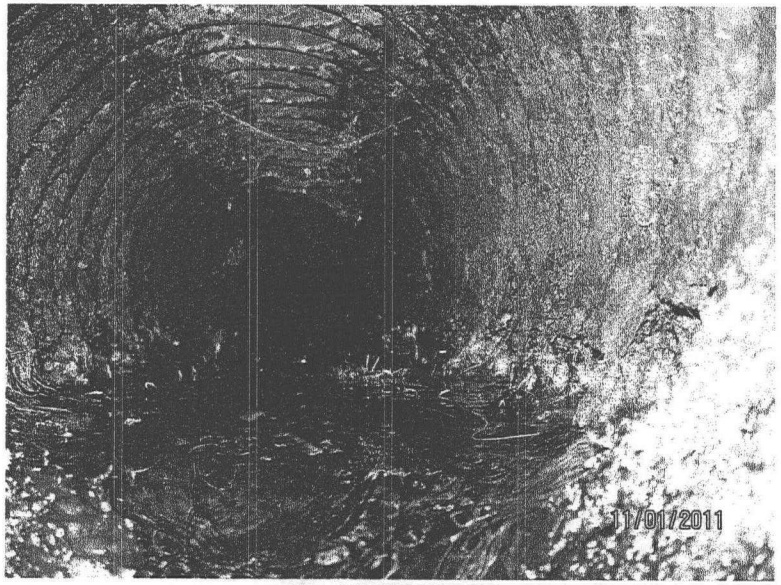
Flume 1-4 Outlet



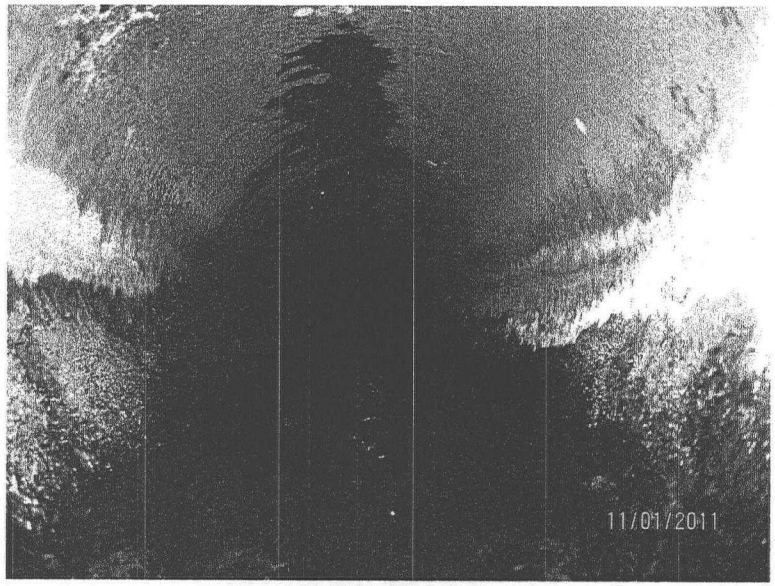
Flume 1-4 Gauge Height



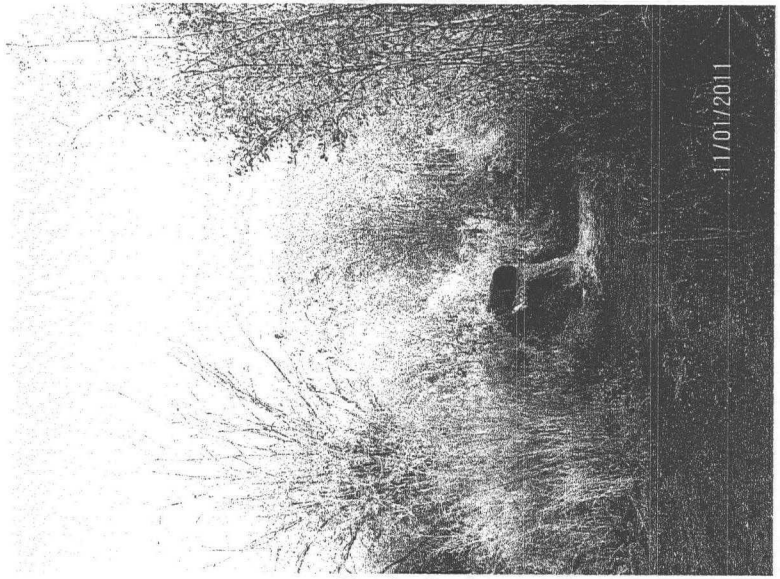
Weir Drain 5



Inside Drain 5

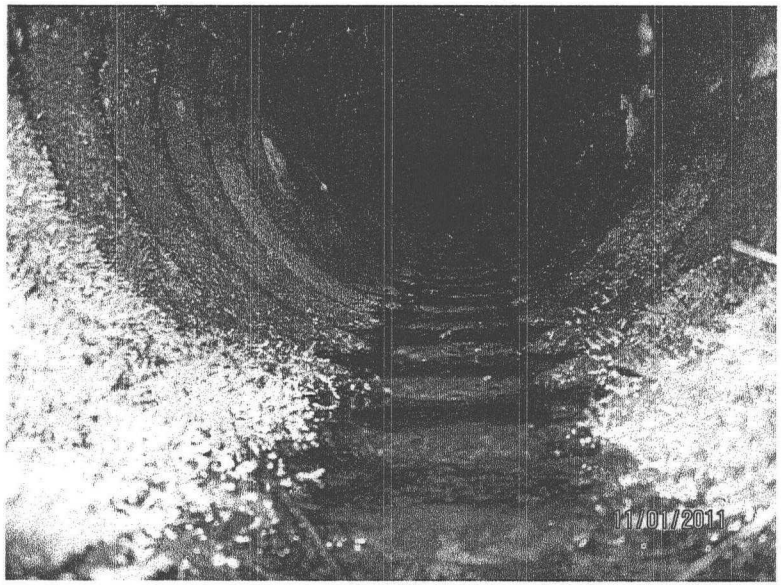


Inside Drain 6



Drain 6

Flume 7-8

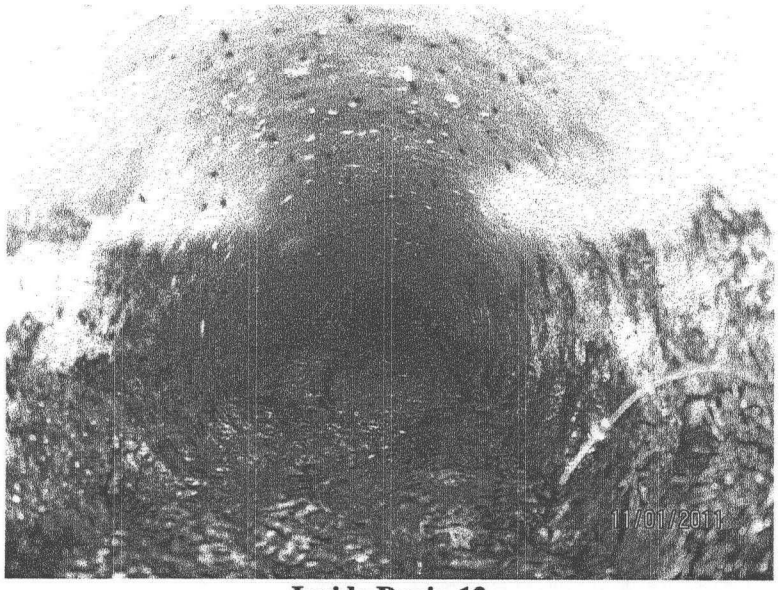


Inside Drain 8

Drains 10 and 11

Drain 9

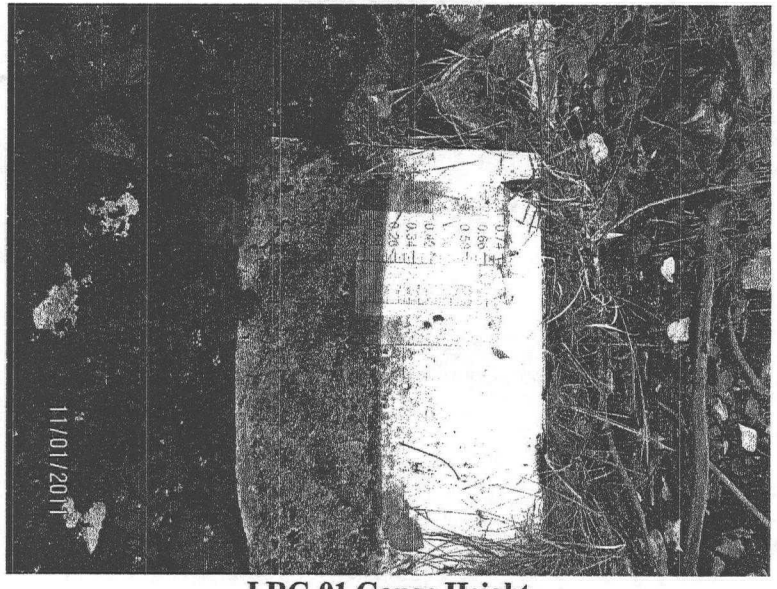
Drain 12



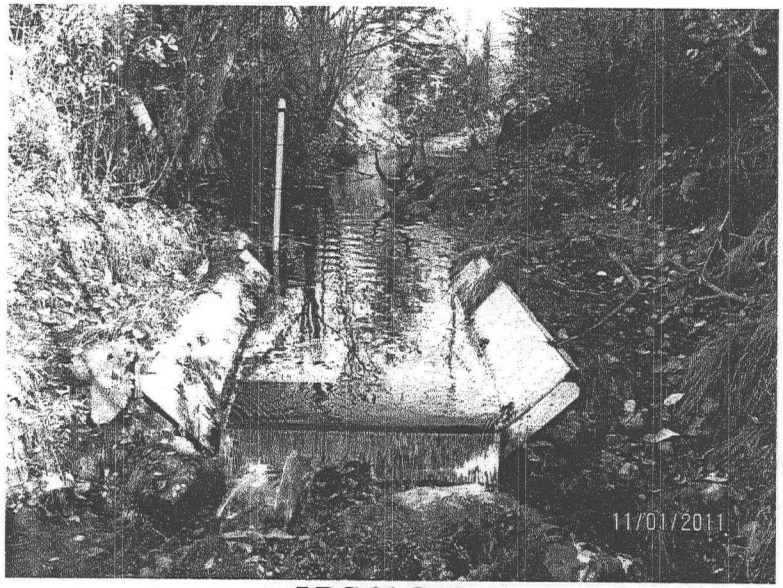
Inside Drain 12

Weir Drain 12

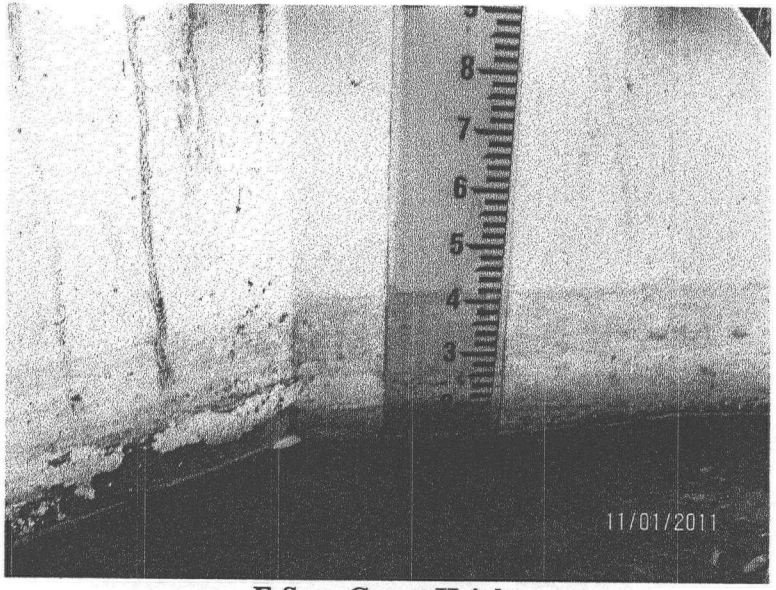
LRC-01 Flume



LRC-01 Gauge Height



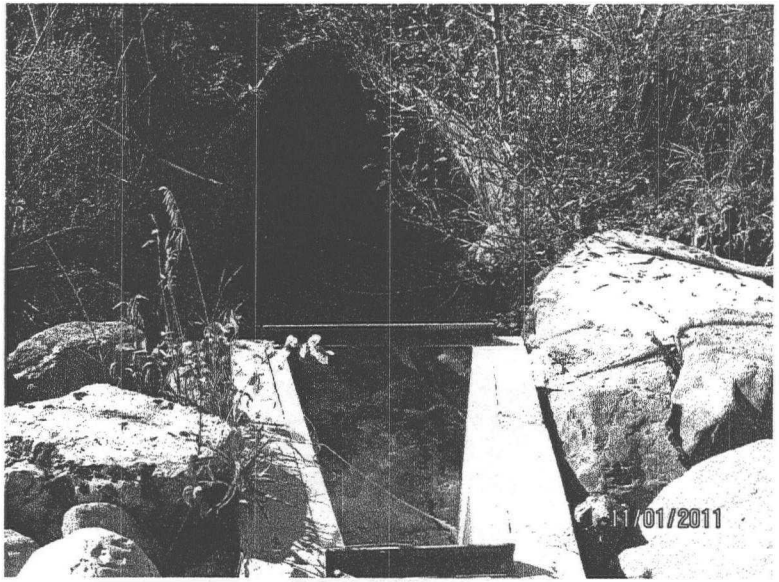
LRC-01 Outlet



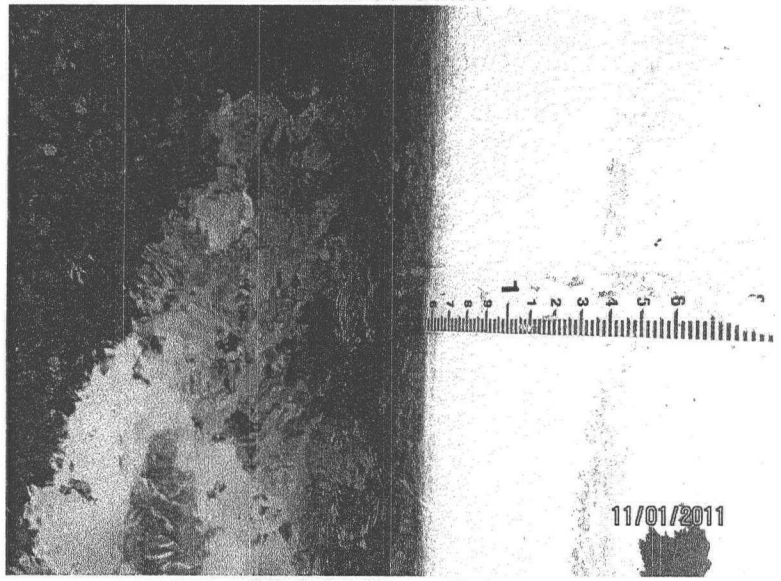
F-Seep Gauge Height

F-Seep Flume

LRC-06 Inlet



LRC-06 Outlet



LRC-06 Gauge Height

APPENDIX 2

PERIODIC INSPECTION REPORT & FIELD NOTES

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.	OBSERVATION DATE (S)	1-Nov-11
OTHER PERSONNEL ON SITE: Dan Nelson from BHI and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Partly Cloudy, ~33-40°, Calm
Work Tasks: Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02 , LRC02 and LRC06, Download transducers.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight,misc. field equip.

EMBANKMENT

AREA INSPECTED	ITEM NO.	CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
CREST	1	GENERAL SURFACE CONDITION	Good, no change				
	2	DISPLACEMENTS	None				
	3	EROSION	None				
	4	CREST ALIGNMENT	Good, no change				
	5	WEEDS OR BRUSH	No change				
	6	ANIMAL BURROWS	No change				
	7	EARTHEN EMERGENCY SPILLWAY	Good, no change				
	8						
	9						
UPSTREAM FACE	10	SLIDES, DISPLACEMENT OR BUDGES	None				
	11	EROSION	None				
	12	WEEDS OR BRUSH	No change				
	13	PIEZOMETER CASINGS	Good, no change				
	14	ABUTMENT CONTACTS	Good, no change				
	15	ANIMALS BURROWS	No change				
	16	DISTANCE TO WATER	~400 ft. reservoir GH= 1.01 feet				
	17						
	18						
	19						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Haflerman, P.E.	OBSERVATION DATE (S)	11/1/11
OTHER PERSONNEL ON SITE: Dan Nelson from BHI and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Partly Cloudy, ~33-40°, Calm
Work Tasks: Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02 , LRC02 and LRC06, Download transducers.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight,misc. field equip.

AREA INSPECTED	ITEM NO.	DOWNSTREAM AND INSTRUMENTATION CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
DOWNSTREAM SLOPE	20	GENERAL SURFACE CONDITION	Good no change				
	21	DISPLACEMENTS	None				
	22	EROSION	None				
	23	LIFT ALIGNMENTS	Good				
	24	WEEDS OR BRUSH	No change				
	25	ANIMALS BURROWS	No change				
	26	EARTHEN EMERGENCY SPILLWAY	Good, no change				
	27	SEEPAGE	None				
	28	ABUTMENT CONTACTS	Good, no change				
INSTRUMENTATION	29	PIEZOMETERS	Measured, see attached measurements	X			
	30	WEIRS	Gauges read, see attached	X			
	31	FLUMES	Gauges read, see attached	X			
	32	RESERVOIR LEVELS	GH = 1.01' Approx. 26.66 AF	X			
	33	RAINY CREEK INFLOW MEASUREMENTS @ URC02	GH= 0.48, 210 gpm	X			
	34	RAINY CREEK OUTFLOW BELOW DAM @ LRC01	GH= 0.20, 418 gpm	X			
	35	STREAM OUTFLOW BELOW MILL POND @LRC02	GH=0.46, 532 gpm	X			
	36	STREAM OUTFLOW FROM CARNEY CREEK @CC02	GH=0.25, 166.05 gpm	X			
	37	STREAM OUTFLOW FROM RAINY CREEK @LRC06	GH=0.56, 722 gpm	X			
	38	FLUME 1-2-3-4	GH=0.14, 12.7 gpm	X			

ADDITIONAL COMMENTS REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Haflerman, P.E.	OBSERVATION DATE (S)	11/1/11
OTHER PERSONNEL ON SITE: Dan Nelson from BHI and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Partly Cloudy, ~33-40°, Calm
Work Tasks: Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02, LRC02 and LRC06, Download transducers.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight,misc. field equip.

AREA INSPECTED	ITEM NO.	CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
		INSTRUMENTATION (CONT.) AND DOWNSTREAM TOE AREA					
INSTRUMENTATION (CONT.)	39	FLUME 10-11-12	Removed, no longer used				
	40	FLUME 7-8	GH=0.10, 4.53 gpm	X			
	41	WEIR 5	GH= 0.104, 4.08 gpm	X			
	42	WEIR 12	GH=0.239, 32.11 gpm	X			
	43	DRAIN 6	GH=0.948, 102.2 gpm	X			
	44	SPILLWAY FLOW	GH=0.00 - Not Running	X			
	45	F-Seep	Not measured	X			
	46	Drain 2	Water continuing to flow	X	X		
	47	Drain 1	No Flow	X			
DOWNSTREAM TOE	48	ABUTMENTS	Good, no change				
	49	SEEPAGE NEAR TOE	Not noticed	X			
	50	SEEPAGE DOWNSTREAM OF TOE, LEFT SIDE	Not noticed	X			
	51	SEEPAGE IN STREAM CHANNEL, LEFT SIDE	Not noticed	X			
	52	VEGETATION	Unchanged in last month	X			
	53	CULVERT AT LOWER ROAD	Not monitored				
	54	SEEPAGE DOWNSTREAM OF TOE, RIGHT SIDE	Not noticed	X			
	55						
	56						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: *Kurt Haflerman, P.E.*	OBSERVATION DATE (S)	*11/1/11*
OTHER PERSONNEL ON SITE: *Dan Nelson from BHI and Jeremy Peterson from Chapman Const.*	WEATHER CONDITIONS	*Partly Cloudy, ~33-40°, Calm*
Work Tasks: *Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02 , LRC02 and LRC06, Download transducers.*	EQUIPMENT	*Well probe, long fiberglass tape, camera, flashlight,misc. field equip.*

AREA INSPECTED	ITEM NO.	SPILLWAYS CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
PRINCIPAL SPILLWAY (BOX CULVERT AND OPEN CHANNEL CHUTE SPILLWAY)	58	ENTRANCE CONDITION	No changes noted				
	59	CENTERLINE CRACK FLOOR	No changes noted	X			
	60	CENTERLINE CRACK CEILING	No changes noted	X	X		
	61	TRANSVERSE JOINTS	No change, same CaCo3 deposits				
	62	GENERAL CONCRETE	Good to excellent, no change				
	63	SEEPAGE OR WATER	None noted	X			
	64	OPEN CHANNEL CONCRETE	Good to excellent, no change				
	65	OPEN CHANNEL JOINTS	Good to excellent, repairs made	X			
	66	OPEN CHANNEL GENERAL	Good				
OPEN CHANNEL STEEP CHUTE SPILLWAY	67	JOINTS	Good				
	68	WALL CONCRETE	Visual from above, good				
	69	FLOOR CONCRETE	Visual from above, good				
	70	WALL TOPS	Good				
	71	WEEDS ALONG WALLS	None noted				
	72	STILLING BASIN RIPRAP	Good				
	73	WEED AND BRUSH IN STILLING BASIN	No change				
	74						
	75						
	76						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.	OBSERVATION DATE (S)	11/1/11
OTHER PERSONNEL ON SITE: Dan Nelson from BHI and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Partly Cloudy, ~33-40°, Calm
Work Tasks: Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02 , LRC02 and LRC06, Download transducers.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight,misc. field equip.

AREA INSPECTED	ITEM NO.	RESERVOIR AND UPSTREAM DRAINAGE BASIN CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
RESERVOIR	77	LEFT SIDE (TAILINGS SLOPE)	Stable				
	78	RIGHT SIDE	Stable				
	79	RESERVOIR LEVEL	GH=1.01 ft.	X			
	80	WETLANDS	Good, no change				
	81	UPPER POND	Full				
	82	DISTANCE FROM UPSTREAM SLOPE	~ 400 ft.	X			
	83						
	84						
	85						
UPSTREAM DRAINAGE BASIN	86	PRECIPITATION WY 2010-20111 AS OF DATE OF INSP.	148% of normal at Banefield. Entire Basin at 162% of normal	X			
	87	RECENT RAINS	3.7 inches of precipitation in the last month.	X			
	88	FIRE DANGER	Low				
	89	CHANGES	None				
	90	VEGETATION	No change in past month				
	91	RAINY CREEK DRAINAGE	Continued decline in flows				
	92	FLEETWOOD CREEK DRAINAGE	Continued decline in flows				
	93	MINE SITE	ER operations complete for season				
	94						
	95						

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

KOOTENAI DEVELOPMENT IMPOUNDMENT DAM ROUTINE OWNERS INSPECTION REPORT

PRINCIPAL INSPECTOR ON SITE: Kurt Hafferman, P.E.	OBSERVATION DATE (S)	11/1/11
OTHER PERSONNEL ON SITE: Dan Nelson from BHI and Jeremy Peterson from Chapman Const.	WEATHER CONDITIONS	Partly Cloudy, ~33-40°, Calm
Work Tasks: Measure flows, check URC02 and Fleetwood Creek, take reservoir level, measure piezometers, check drains, drain flow, gauge height at LRC01, CC02, LRC02 and LRC06, Download transducers.	EQUIPMENT	Well probe, long fiberglass tape, camera, flashlight,misc. field equip.

AREA INSPECTED	ITEM NO.	EARTHEN SPILLWAY AND MILL POND AND OTHER — CONDITION	OBSERVATION	CHECK ACTION NEEDED: MONITOR	INVESTIGATE	REPAIR	OTHER
EARTHEN SPILLWAY	96	LEFT SIDE NEXT TO CREST	Good, no change				
	97	RIGHT SIDE	Good, no change				
	98	RESERVOIR LEVEL	Normal				
	99	RIPRAP	Good, no change				
	100	ROAD CONDITION	Good, no change				
	101	DOWNSTREAM SLOPE	Good, no change				
	102	TRASH RACk	Not measured	X			
	103						
	104						
MILL POND	105	CREST	Good				
	106	UPSTREAM FACE	Good				
	107	DOWNSTREAM FACE	Good				
	108	SPILLWAY FLOW	Flowing				
	109	RIPRAP IN SPILLWAY	Good, no change				
	110	ANIMALS ON EMBANKMENT	Not seen	X			
	111	ANIMALS IN SPILLWAY	Not seen				
	112	RESERVOIR LEVEL	Normal	X			
OTHER	113	Animals Monitoring	None noted during this visit.	X			

ADDITIONAL COMMENTS, REFER TO ITEM NO. IF APPLICABLE

Engineers Certification and Seal

I declare that the data collection and completion of this report titled the October 2011 Routine Owners Inspection Report for the Kootenai Development Impoundment Dam, known as the subject property was completed under my direction. This assessment has revealed the conditions discussed in the inspection form in connection with the property. I declare that the statements made in this report are true to the best of my belief and professional knowledge.

Kurtis M. Hafferman, P.E. MT PE 10457 Date

Location _____ Date _____

Project / Client _____

Location _____ Date _____

Project / Client _____

PARTLY CLOUDY

33-40° calm

N @ 10:30

OFF @ 2:00

R561

KDIN

OCTOBER INSPECTION

TUESDAY NOVEMBER 1, 2011

DAN

KMH

SP

Location _____ Date _____

Project / Client _____

FLUMES

LRC-02 34°F

GH= 0.25' Low flow

1560 Removed

LRC-02 33°F

GH= 0.46' Low flow

1560 Removed

FLEETWOOD CREEK 39°F

GH= 0.24'

Low flow

URC-02 31°F

GH = 0.48'

TRANSDUCER Download @ 11:32 a.m.

Reset to 5 min. interval @ 11:35

RESERVOIR 25°F

GH = 1.01'

TRANSDUCER Download @ 11:45

Reset to 5 min intervals @ 11:50

LRC-01 45°F

GH: 0.20 ~450 cfm.

TRANSDUCER DOWNLOAD @ 12:45

Location _____ Date _____

Project / Client _____

SNOW IN HIGHER MTNS ELEVATIONS

LRC-01 RESET TO 5 MIN INTERVAL @ 12:50

TRANSDUCER SET IN AB @ 1:05

SET AT +/- 16.5' DOWN

LEVEL @ 72°

SET BAROLOGGER IN SPILLWAY

@ 1:20 5 min. INTERVAL

LRC-06

GH= 0.50'

Location _____ Date _____

Project / Client _____

DRAINS

D1 DRY

D2 VERY LOW FLOW CLEAR/STEADY +/- 1/4" IN PIPE

D3 33°F LOW FLOW CLEAR/STEADY +/- 3/4"

D4 34°F LOW FLOW CLEAR/STEADY +/- 5/8"

FLUME 1-4 33°F
GH = 0.14'

D5 CLEAR/STEADY HOLDING AT HIGHER THAN NORMAL FLOWS

W5 36°F GH = 1 1/4"

D6 LOW FLOW CLEAR/STEADY 41°F
GH = 11 3/8"

D7 NO FLOW IN PIPE, INCREASING SEEPAGE BELOW PIPE CLEAR/STEADY 41°F

D8 VERY LOW FLOW CLEAR/STEADY +/- 1/4"
41°F

FLUME 7-8 41°F
GH = 0.10'

D9 45°F LOW FLOW CLEAR/STEADY
+/- 1 1/4"

D10 45°F CLEAR/STEADY MOD FLOW
+/- 2" IN PIPE SEEPAGE UNDER PIPE

Location _____ Date _____

Project / Client _____

D11 44°F LOW FLOW SEEPAGE UNDER PIPE CLEAR/STEADY
+/- 1/2"

D12 42°F MOD FLOW CLEAR/STEADY +/- 2" IN PIPE

W12 45°F GH = 2 7/8"

Location _____ Date _____

Project / Client _____

Flow @ LR8-01

Dist	de	√
71.4	0	0
71.7	0.20	0.98
72.0	0.20	1.64
72.5	0.15	1.54
73.0	0.15	1.82
73.5	0.17	1.66
74.0	0.12	1.02
74.5	.2	0.63
75.0	.2	0.63
75.5	.28	1.04
76.0	.38	1.26
76.5	.42	1.51
77.0	.35	0.43
77.75	0	0

Location LR801 Date 11-1-2011

Project / Client RDID-R9

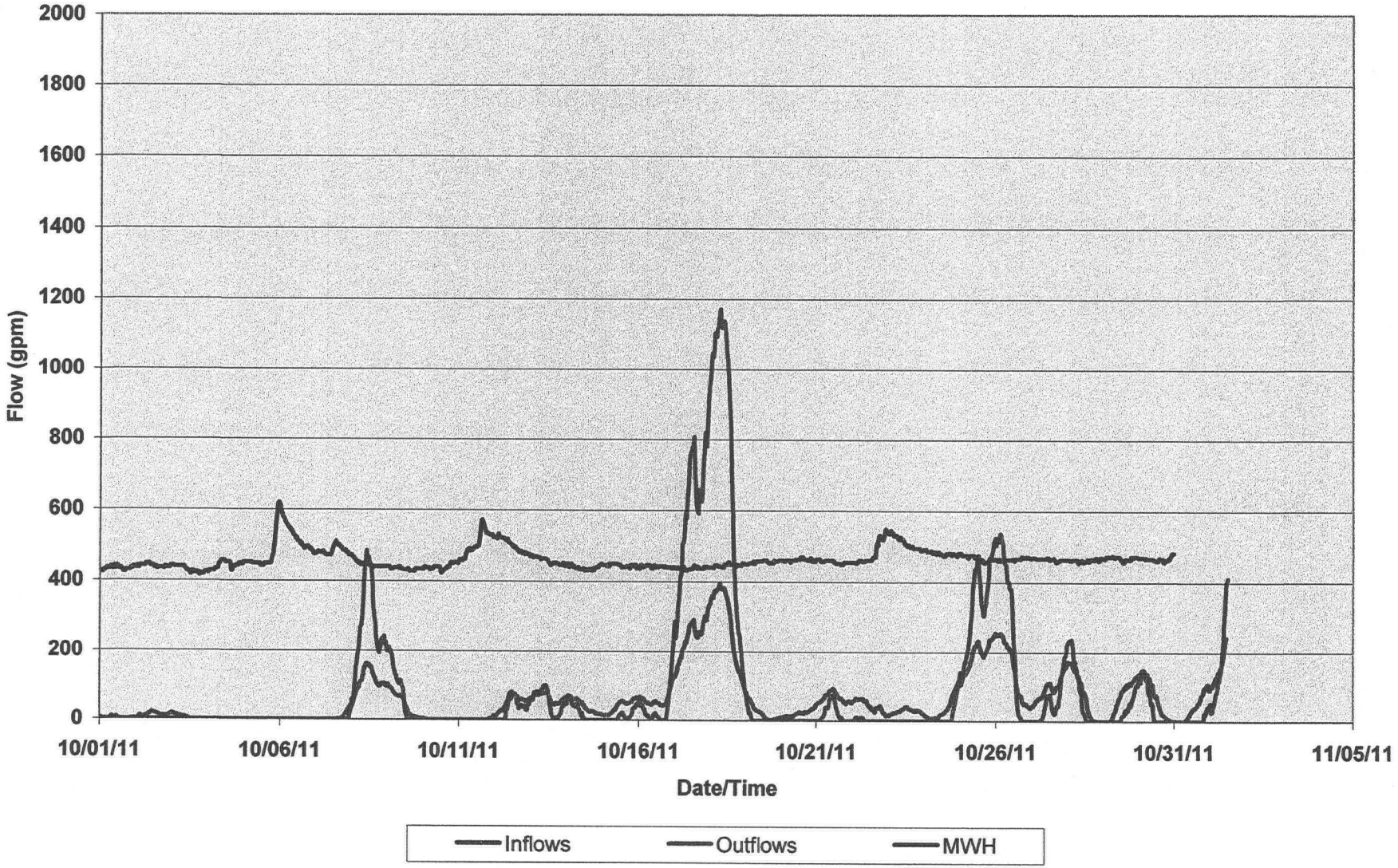
HAFFERMAN

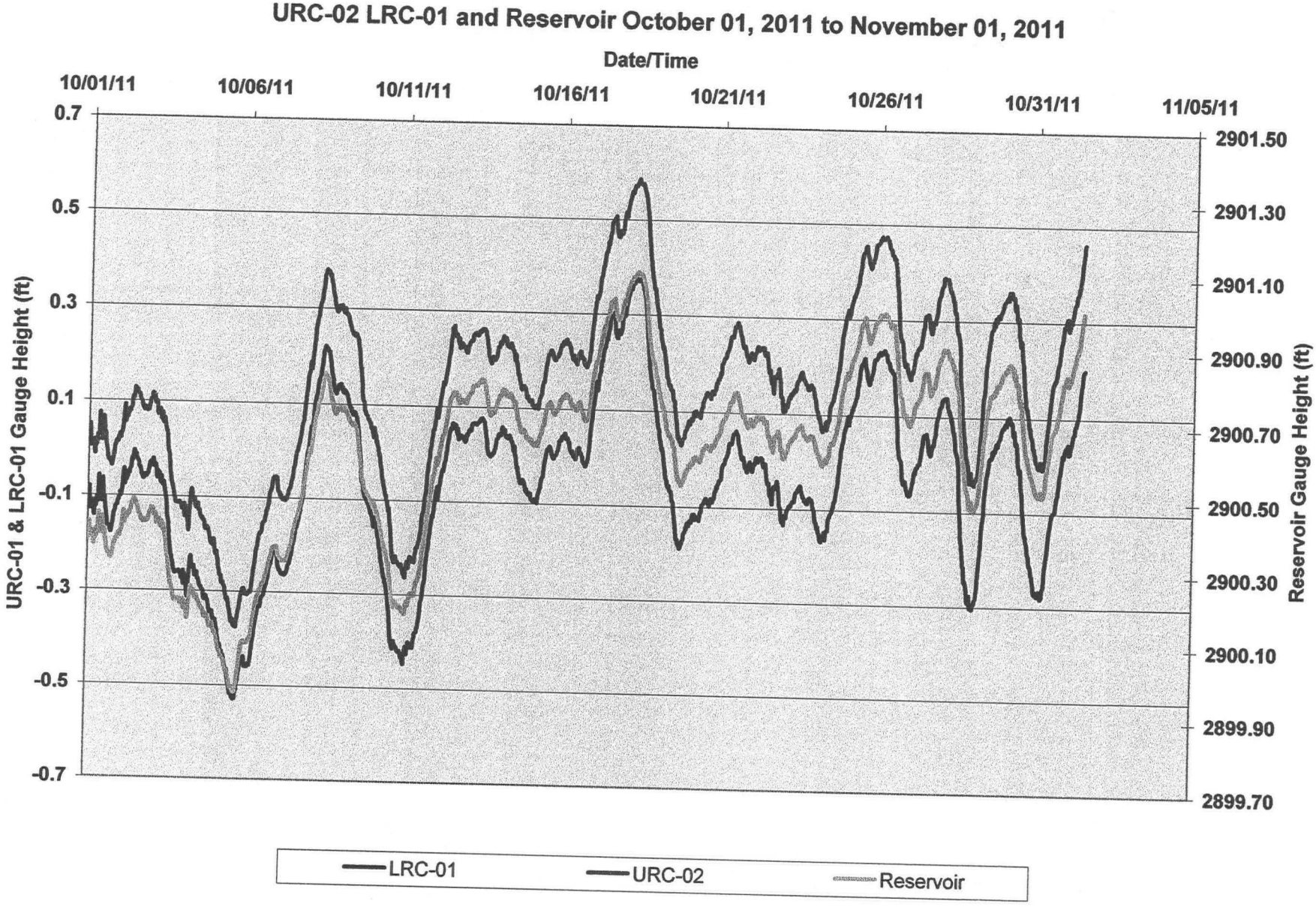
Dist	depth	Velocity
71.2	0	0
72.0	.15	1.38
72.5	.15	1.73
73.0	.18	0.38
73.5	.2	1.34
74.0	.2	0.47
74.5	.22	0.05
75.0	.22	0.48
75.5	.22	0.34
76.0	0.30	0.69
76.5	.28	1.18
77.0	.30	0.49
77.7	0	0

APPENDIX 3

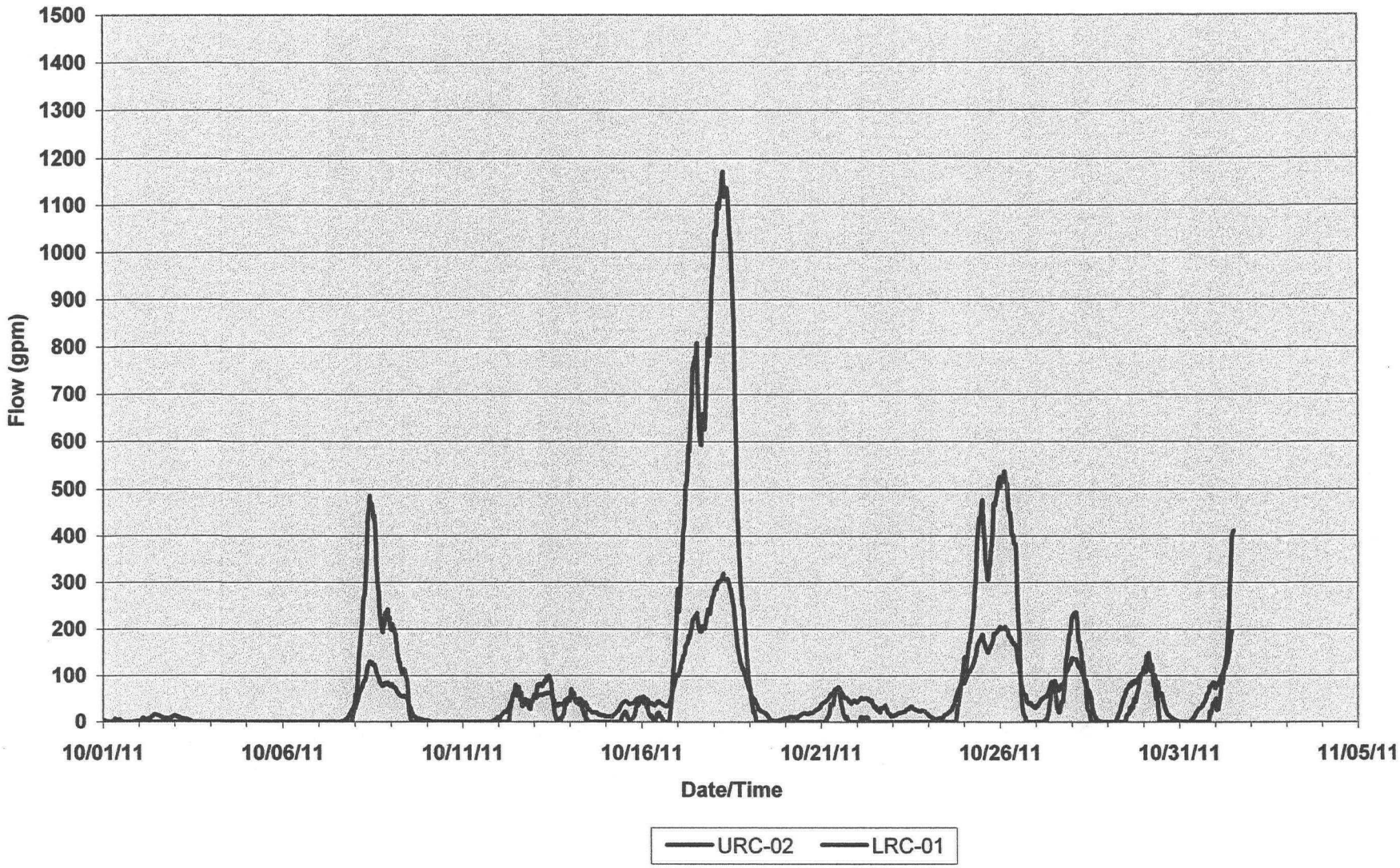
UPDATED PIEZOMETER DATA AND GRAPHS

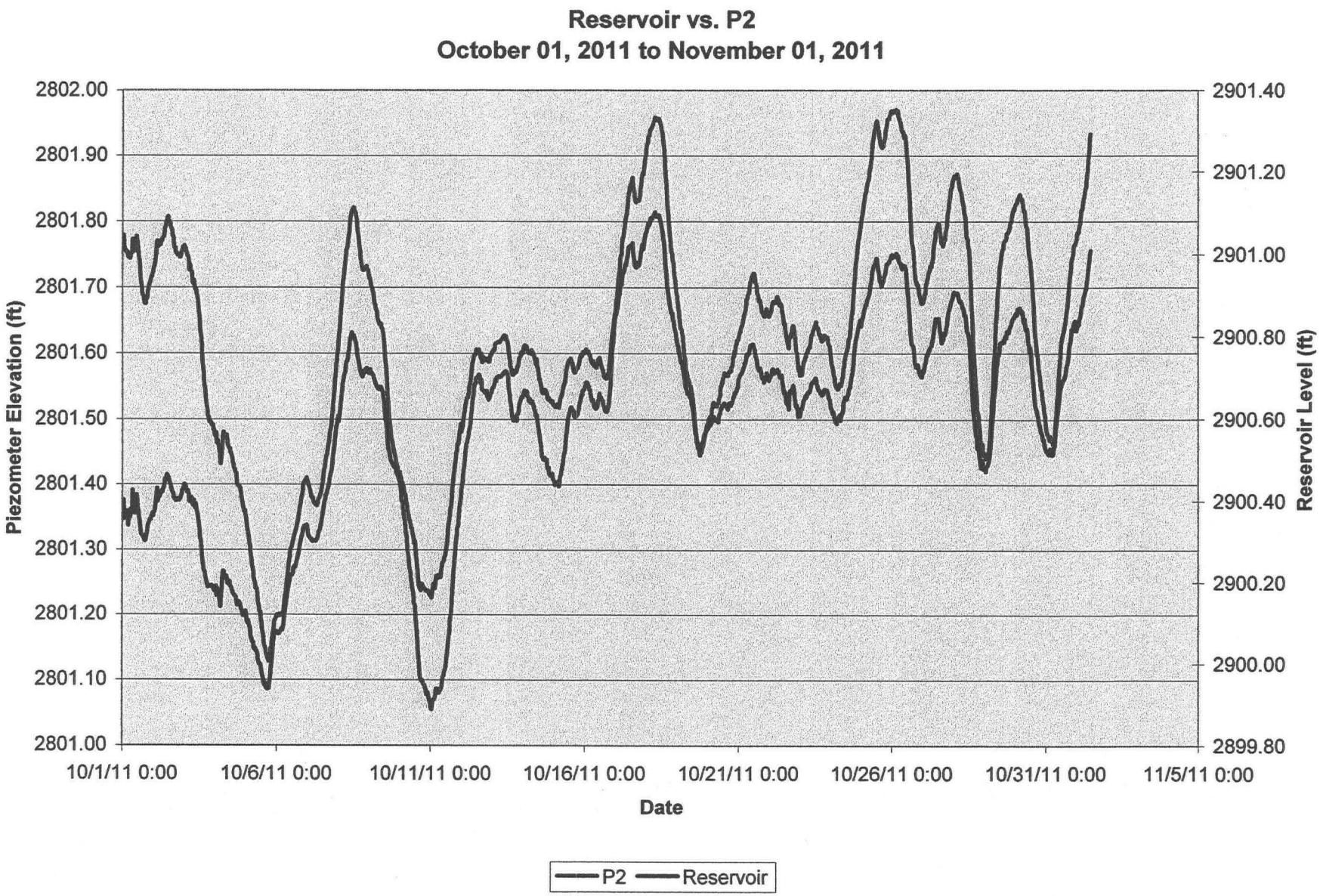
Inflows vs. Outflows October 01, 2011 to November 01, 2011



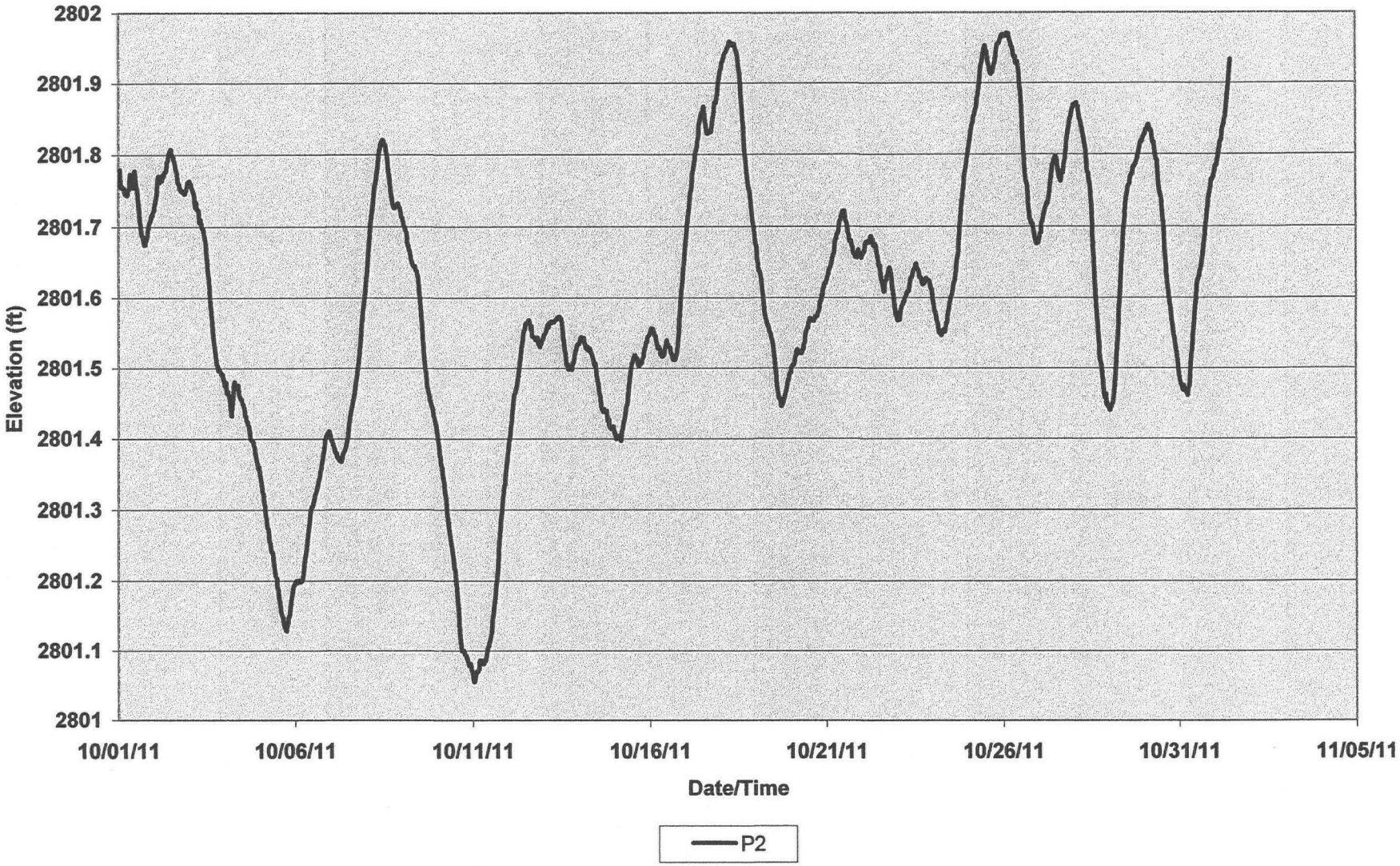

URC-02 LRC-01 and Reservoir October 01, 2011 to November 01, 2011
Date/Time
10/01/11
10/06/11
10/11/11
10/16/11
10/21/11
10/26/11
10/31/11
11/05/11
0.7
0.5
0.3
0.1
-0.1
-0.3
-0.5
-0.7
URC-01 & LRC-01 Gauge Height (ft)
2901.50
2901.30
2901.10
2900.90
2900.70
2900.50
2900.30
2900.10
2899.90
2899.70
Reservoir Gauge Height (ft)
LRC-01
URC-02
Reservoir

URC-02 Flows October 01, 2011 to November 01, 2011




Reservoir vs. P2
October 01, 2011 to November 01, 2011
Piezometer Elevation (ft)
2802.00
2801.90
2801.80
2801.70
2801.60
2801.50
2801.40
2801.30
2801.20
2801.10
2801.00
Reservoir Level (ft)
2901.40
2901.20
2901.00
2900.80
2900.60
2900.40
2900.20
2900.00
2899.80
10/1/11 0:00
10/6/11 0:00
10/11/11 0:00
10/16/11 0:00
10/21/11 0:00
10/26/11 0:00
10/31/11 0:00
11/5/11 0:00
Date
P2
Reservoir

Piezometer P2 October 01, 2011 to November 01, 2011



Kootenai Impoundment Dam **Stream & Drain Flow Measurements**
R.56.1

Gage Heights **OT= Over Topping**

Date	W1234 (GH, ft)	W5 (GH, ft)	D6 (GH below top, fL)	W78 (GH, ft.)	W10,11, 12 (GH, ft.)	W12 (GH, ft)	URC02 (GH, ft.)	LRC06 (GH, ft)	LRC01 (GH, ft)	LRC02 (GH, ft)	CC02 (GH, ft.)	Reservoir (GH)
9/25/2007	0.036	0.089				0.161			0.75			
9/26/2007	0.042	0.083				0.146						
11/9/2007	0.0417	0.063	0.938			0.146						
12/26/2007	0.0417	0.083	0.969			0.146						
2/7/2008	0.0417	0.094	0.969			0.146						
3/10/2008	0.0417	0.042	0.901			0.177						
4/23/2008	0.1094	0.115	0.844			0.161			0.8			
5/16/2008	OT	0.104	0.615			0.344			1.15			
5/20/2008	OT		0.667			0.438						
6/3/2008	OT	0.208	0.698			0.427			1.24			
7/3/2008	0.1771	0.125	0.771			0.385			1.05			
8/8/2008	0.08	0.104	0.823			0.260						
10/2/2008	0.02	0.083	0.792			0.208			0.55			
12/1/2008	0.02	0.073	0.800			0.229						
12/12/2008			0.820							0.35	0.2	
1/15/2009	0.02	0.082	0.900			0.198	0.29			0.32	0.1	
2/20/2009	0.02	0.042	0.938			0.219	0.19		0.42	0.46	0.15	1.32
4/7/2009			0.860					0.74		0.68	0.43	
4/13/2009	0.13	0.083	0.813			0.344		0.85		0.65	0.43	
4/24/2009	0.36		0.771			0.406		1.33		1.41		2.15
4/30/2009	OT	0.208	0.750			0.417	1.14	1.265		1.302	0.55	1.9
5/1/2009	0.83	0.188	0.760		0.55	0.427	1.11	1.21				1.95
5/5/2009	0.80	0.167	0.745	0.168	0.522	0.417		1.25		1.28	0.475	2.05
5/7/2009								1.37		1.38	0.52	
5/19/2009	0.85			0.18	0.57		1.47			1.36	0.463	2.17
5/27/2009	0.85	0.188		0.18	0.57	0.458	1.305		0.97			2.11
6/26/2009	0.478	0.146	0.854	0.125	0.51	0.396	0.61	0.77	0.79	0.769	0.18	1.29
6/29/2009							0.565					1.18
7/24/2009	0.250	0.104		0.11	0.46	0.292	0.375	0.52	0.75	0.51	0.135	0.4
8/21/2009	0.12		0.917	0.04	0.44		0.32	0.425	0.68	0.378	0.131	0.04
9/11/2009	0.115	0.104	0.979	0.120	0.300	0.188	0.190	0.38	0.640	0.315	0.14	-0.30208
10/23/2009		0.083	0.927	0.120	0.305	0.167	0.160	0.385		0.29	0.14	-0.4
11/25/2009	0.100	0.083	0.990	0.130	0.290	0.162	0.320	0.45		0.35	0.19	0.19
12/29/2009	0.120	0.063	0.969	0.155	0.305	0.177	0.315	0.42	0.590			0.13

1/29/2010	0.120	0.052	0.969	0.130	0.320	0.188	0.310	0.46	0.620	0.37	0.21	0.15
3/3/2010	0.130	0.042	0.990	0.120	0.320	0.198	0.340		0.650	0.40	0.24	0.16
3/26/2010	0.130	0.073	0.953	0.110	0.320	0.210	0.468			0.465	0.27	0.325
4/30/2010	0.240	0.083	0.886	0.130	0.380	0.210	0.591	0.585	0.710	0.547	0.277	0.92
6/3/2010	0.210	0.073	0.922	0.120		0.281	0.520		0.710	0.55	0.275	0.90
6/25/2010	0.28		0.885	0.100		0.333	0.848	0.062		0.597	0.297	1.55
8/2/2010	0.21	0.073	0.896	0.100		0.281	0.33		0.68	0.425	0.136	0.55
8/23/2010	0.16	0.040	0.948	0.100		0.210	0.240	0.375	0.640	0.339	0.126	0.130
9/28/2010	0.14	0.031	0.937	0.130		0.210	0.305	0.380	0.660	0.310	0.170	0.020
11/30/2010	0.12	0.010	0.979	0.120		0.208	0.320	0.440	0.670			
1/7/2011	0.12	0.010	0.958	0.130		0.167	0.350	0.510	0.700	0.400	0.310	-0.400
2/4/2011	0.14	0.040	0.916	0.120		0.208	0.380		0.200	0.450		
3/4/2011	0.14	0.020	0.938	0.140		0.193	0.380	0.510	0.210	0.460	0.380	-0.030
3/31/2011	0.24	0.063	0.875	0.130		0.323	0.720	0.800	0.280	0.730	0.490	0.450
5/4/2011	0.89	0.167	0.708	0.200		0.531	1.690	1.770	0.580	1.980	0.770	2.890
5/18/2011	0.98	0.218	0.688	0.200		0.583	2.540	OT	0.660	OT	1.020	3.330
5/25/2011	0.98	0.239	0.688	0.210		0.563	1.720	1.630	0.660	1.520	0.730	3.210
6/23/2011	0.94	0.292	0.688	0.200		0.531	1.320	1.700	0.640	1.690	0.430	2.750
7/29/2011	0.51	0.187	0.802	0.130		0.395	0.760	0.900	0.390	0.860	0.220	2.240
8/25/2011	0.25	0.146	0.849	0.100		0.333	0.490	0.650	0.300	0.580	0.140	1.370
9/29/2011	0.15	0.125	0.948	0.110		0.260	0.380	0.550	0.220	0.440	0.150	0.770
11/1/2011	0.14	0.104	0.948	0.100		0.239	0.480	0.560	0.200	0.460	0.250	1.010

	P	A8	P2	PM1	PM2	P1	P3	P4	P5	PM3	PM4	PM5	PM6
Date	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
4/24/2008	100.5	7.60	114.42	50.16	101.1	103.39	60.65	106.24	104.35	51.78	41.12	50.2	66.82
5/30/2008		2.71		48.2	88								
6/30/2008		2.93		48.36	90.71								
7/3/2008	100.34	4.65	105.4	49.73	97.49	101.9	dry	102.48	104.28	51.59	dry	dry	dry
8/8/2008	dry	6.97	117.8	53.12	101.1	dry	dry	dry	104.34	51.79	dry	dry	dry
10/1/2008		8.09		53.94									
1/15/2009	100.7	8.30	120.4	53.86	104.11	103.7	60.5	106.21	104.36	51.78	41.13	49.98	66.71
2/20/2009		8.20	119.9	53.69	103.75								
4/13/2009	101.55	6.88	112.87	51.43	100.24	103.8	60.4	106.05	103.44	51.78	41.1	50	66.8
4/24/2009	dry	4.59	98.18	45.37	92.13	103.68	dry	97.45	102.82	49.63	dry	dry	dry
4/30/2009	dry	3.48	91.55	44.66	87.81	dry	dry	91.28	99.09	49.69	dry	dry	dry
5/1/2009		3.44	91.45										
5/5/2009	dry	3.41	91.68	45.71	88.15	101.58	dry	98.97	98.71	dry	dry	50.8	
5/27/2009	dry	2.65	90.4	45.62	89.6	96.88	dry	88.25	97.97	50.12	41.51	dry	dry
6/26/2009	dry	4.57	105.24	50.6	97.24	102.39	dry	102.21	104.25	50.02	dry	51.57	dry
6/29/2009		4.75	106.36										
7/24/2009	dry	6.42	114.13	52.07	100.41	dry	dry	dry	dry	50.02	dry	dry	dry
8/21/2009	dry	7.66	118.67	53.42	102.18	dry	dry	106.2	dry	dry	dry	50.04	dry
9/11/2009	dry	8.20	119.91	53.69	103.39	dry	dry	dry	dry	dry	dry	dry	dry
10/23/2009	dry	8.30	120.85	53.81	104.22	dry	dry	dry	dry	dry	dry	dry	dry
11/25/2009	dry	8.31	120.56	53.71	104.25	dry	dry	dry	dry	dry	dry	dry	dry
12/29/2009	dry	8.37	120.64	53.74	104.28	dry	dry	dry	dry	dry	dry	dry	dry
1/29/2010	dry	8.32	120.24	53.65	dry	dry	dry	dry			dry	dry	dry
3/3/2010	dry	7.37	116.42	52.25	102.02	dry	dry	dry	dry	dry	dry	dry	dry
3/26/2010	dry	8.19	114.49	53.39	103.62	dry	dry	dry	dry	dry	dry	dry	dry
6/3/2010	dry	7.40	117.15	52.44	102.27	dry	dry	dry	dry	dry	dry	dry	dry
6/25/2010	dry	6.75	113.52	51.41	100.67	dry	dry	dry	104.09	51.52	dry	dry	dry
8/2/2010	dry	6.96	117.35	52.15	102.3	dry	dry	dry	dry	51.76	dry	dry	dry
9/28/2010	dry	8.34		53.15	104.4	dry	dry	dry	dry	dry	dry	dry	dry
10/29/2010	dry	8.30	120.68	52.92	104.43	dry	dry	dry	dry	dry	dry	dry	dry
11/30/2010	dry	8.26	120.25	52.5	104.25	dry	dry	dry	dry	dry	dry	50.07	dry
1/7/2011	dry	8.15	119.75	51.95	103.85	dry	dry	dry	dry	dry	dry	50.07	dry
2/4/2011	dry	7.21	118.64	51.61	103.16	dry	dry	dry	dry	dry	dry	50.06	dry
3/4/2011	dry	7.48	118.1	51.58	102.3	dry	dry	dry	dry	dry	dry	51	dry

3/31/2011	dry	6.37	115.25	51.36	101.53	103.67	dry	dry	103.54	51.78	dry	50.06	dry
5/4/2011	dry	2.40	84.02	38.2	81.96	98.58	60.5	85.84	96.4	47.98	41.16	50.06	66.84
5/18/2011	dry	1.40	72.25	34.42	75.14	90.16	dry	71.97	94.14	46.3	40.14	50.06	dry
5/25/2011	dry	1.30	72.98	33.88	74.51	89.27	dry	70.58	93.9	46.03	40.32	50.07	dry
6/23/2011	dry	1.30	78.73	35.53	82.62	88.22	dry	75.04	94.18	46.85	41.12	dry	dry
7/29/2011	dry	4.10	105.09	50.73	94.01	100.23	dry	101.6	103.99	51.32	41	50.1	dry
8/25/2011	dry	5.27	113.29	53.14	98.89	dry	dry	106.21	104.28	51.57	41.17	50.07	dry
9/29/2011	dry	6.93	118.29	53.93	102.28	dry	dry	106.21	104.28	51.76	dry	50.07	dry

From S:\DOCUMENT\JOB FILES\Jobs\R\R_56_01\Documents\Annual Inspection\PIEZOMETERS

Billmayer & Hafferman Inc.
Kootenai Development Impoundment Dam Annual Inspection
3-Nov-10 Last Update
Haffennan Bold = interpolated values
Wet Piezometer Plots

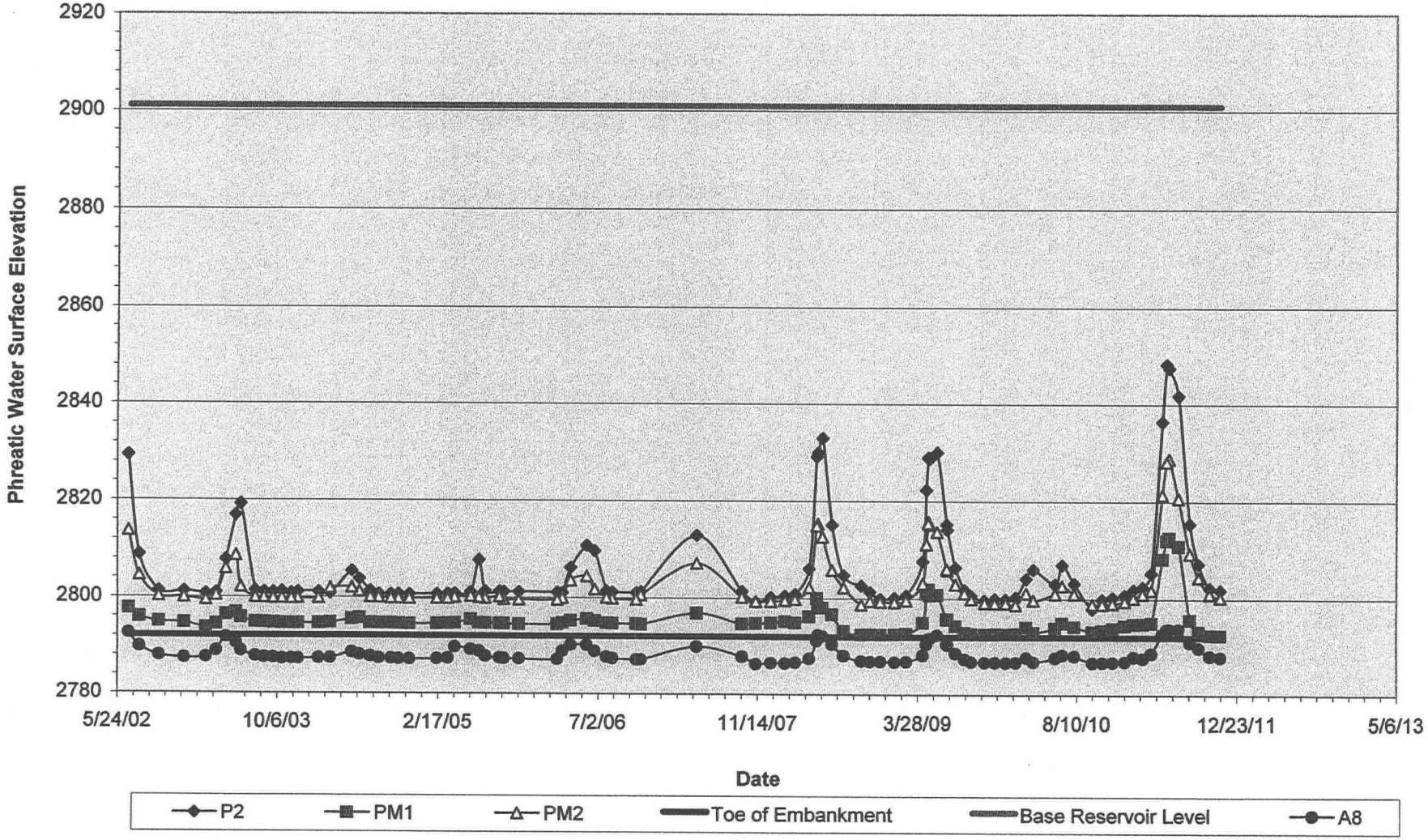
Piezometer Num	P2		Elev.	PM1		Elev.	PM2		Elev.	A8		Elev.
		T.O.C.=	2920.54		T.O.C.=	2846.41		T.O.C.=	2903.34		T.O.C.=	2795.11
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev
11/1/2011	118.71	122.26	2801.83	53.99	54.89	2792.42	102.96	104.91	2800.38	7.2	28.22	2787.91
9/29/2011	118.29	122.23	2802.25	53.93	54.92	2792.48	102.28	104.88	2801.06	6.93	28.23	2788.18
8/25/2011	113.29	122.23	2807.25	53.14	54.92	2793.27	98.89	104.88	2804.45	5.27	28.23	2789.84
7/29/2011	105.09	122.28	2815.45	50.73	54.91	2795.68	94.01	104.96	2809.33	4.1	28.26	2791.01
6/23/2011	78.73	122.28	2841.81	35.53	54.91	2810.88	82.62	104.96	2820.72	1.3	28.26	2793.81
5/25/2011	72.98	122.28	2847.56	33.88	54.91	2812.53	74.51	104.96	2828.83	1.3	28.26	2793.81
5/18/2011	72.25	122.28	2848.29	34.42	54.87	2811.99	75.14	104.92	2828.2	1.4	28.24	2793.71
5/4/2011	84.02	122.28	2836.52	38.2	54.82	2808.21	81.96	104.57	2821.38	2.4	28.25	2792.71
3/31/2011	115.25	122.27	2805.29	51.36	54.83	2795.05	101.63	104.85	2801.81	6.37	28.24	2788.74
3/4/2011	118.1		2802.44	51.58		2794.83	102.3		2801.04	7.48		2787.63
2/4/2011	118.64	122.24	2801.9	61.61	54.82	2794.8	103.16	104.77	2800.18	7.21	28.21	2787.90
1/7/2011	119.75	122	2800.79	51.95	54.85	2794.46	103.85	104.8	2799.49	8.15	28.2	2786.96
11/30/2010	120.25	122.3	2800.29	52.5	54.85	2793.91	104.25	104.8	2799.09	8.26	28.2	2786.85
10/29/2010	120.68	122	2799.86	52.92	54.85	2793.49	104.43	104.95	2798.91	8.3	28.2	2786.81
9/28/2010	122.6	122.1	2797.94	53.15	54.8	2793.26	104.4	104.6	2798.94	8.34	28.3	2786.77
8/2/2010	117.35	122.1	2803.19	52.15	54.8	2794.26	102.3	104.6	2801.04	6.96	28.3	2788.15
6/25/2010	113.52	122.1	2807.02	51.41	54.8	2795	100.67	104.6	2802.67	6.75	28.3	2788.36
6/3/2010	117.5	122.1	2803.04	52.44	54.8	2793.97	102.27	104.6	2801.07	7.4	28.3	2787.71
3/26/2010	114.49	122.1	2806.05	63.39	54.8	2793.02	103.62	104.6	2799.72	8.19	28.3	2786.92
3/3/2010	116.42	122.1	2804.12	52.25	54.8	2794.16	102.2	104.6	2801.14	7.37	28.3	2787.74
1/29/2010	120.24	122.1	2800.3	53.65	54.8	2792.76	104.6	104.6	2798.74	8.32	28.3	2786.79
12/29/2009	120.64	122.1	2799.9	63.74	54.8	2792.67	104.28	104.6	2799.06	8.37	28.3	2786.74
11/25/2009	120.56	122.1	2799.98	53.71	54.8	2792.7	104.25	104.6	2799.09	8.31	28.3	2786.80

Piezometer Num	P2		Elev.	PM1		Elev.	PM2		Elev.	A8		Elev.
		T.O.C.=	2920.54		T.O.C.=	2846.41		T.O.C.=	2903.34		T.O.C.=	2795.11
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev
10/23/2009	120.85	122.1	2799.69	53.81	54.8	2792.6	104.22	104.6	2799.12	8.3	28.3	2786.81
9/11/2009	119.91	122.1	2800.63	53.69	54.8	2792.72	103.39	104.6	2799.95	8.2	28.3	2786.91
8/21/2009	118.67	122.1	2801.87	53.42	54.8	2792.99	102.18	104.6	2801.16	7.66	28.3	2787.45
7/24/2009	114.13	122.1	2806.41	52.07	54.8	2794.34	100.41	104.6	2802.93	6.42	28.3	2788.69
6/29/2009	106.36	122.1	2814.18	50.73	54.8	2795.68	97.52	104.6	2805.82	4.75	28.3	2790.36
6/26/2009	105.24	122.1	2815.3	50.6	54.8	2795.81	97.24	104.6	2806.1	4.565	28.3	2790.55
5/27/2009	90.4	122.1	2830.14	45.62	54.8	2800.79	89.6	104.6	2813.74	2.65	28.3	2792.46
5/5/2009	91.68	122.1	2828.86	45.71	54.8	2800.7	88.15	104.6	2815.19	3.41	28.3	2791.70
5/1/2009	91.45	122.1	2829.09	44.56	54.8	2801.85	87.52	104.6	2815.82	3.44	28.3	2791.67
4/30/2009	91.55	122.1	2828.99	44.66	54.8	2801.75	87.81	104.6	2815.53	3.48	28.3	2791.63
4/24/2009	98.18	122.1	2822.36	45.37	54.8	2801.04	92.13	104.6	2811.21	4.59	28.3	2790.52
4/13/2009	112.87	122.1	2807.67	51.43	54.8	2794.98	100.24	104.6	2803.1	6.88	28.3	2788.23
2/20/2009	119.9	122.1	2800.64	53.69	54.8	2792.72	103.75	104.6	2799.59	8.2	28.3	2786.91
1/15/2009	120.4	122.1	2800.14	53.86	54.8	2792.55	104.11	104.6	2799.23	8.3	28.3	2786.81
12/1/2008	120.61	122.1	2799.93	53.9	54.8	2792.51	104.07	104.6	2799.27	8.21	28.3	2786.90
10/30/2008	119.17	122.1	2801.37	53.87	54.8	2792.54	103.91	104.6	2799.43	8.18	28.3	2786.93
10/2/2008	117.9	122.1	2802.64	53.94	54.8	2792.47	104.6	104.6	2798.74	8.09	28.3	2787.02
8/8/2008	115.78	122.1	2804.76	53.12	54.8	2793.29	101.1	104.6	2802.24	6.97	28.3	2788.14
7/3/2008	105.4	122.1	2815.14	49.73	54.8	2796.68	97.49	104.6	2805.85	4.65	28.3	2790.46
6/3/2008	87.52	122.1	2833.02	48.36	54.8	2798.05	90.71	104.6	2812.63	2.93	28.3	2792.18
5/20/2008	90.49	122.1	2830.05	48.17	54.8	2798.24	88	104.6	2815.34	2.67	28.3	2792.44
5/16/2008	91.34	122.1	2829.2	46.45	54.8	2799.96	88.4	104.6	2814.94	3.88	28.3	2791.23
4/23/2008	114.42	122.1	2806.12	50.16	54.8	2796.25	101.1	104.6	2802.24	7.6	28.3	2787.51
3/10/2008	119.65	122.1	2800.89	51.47	54.8	2794.94	103.53	104.6	2799.81	8.4	28.3	2786.71
2/7/2008	120.1	122.1	2800.44	61.2	54.8	2795.21	103.8	104.6	2799.54	8.55	28.3	2786.56
12/26/2007	120.34	122.1	2800.2	51.52	54.8	2794.89	103.98	104.6	2799.36	8.52	28.3	2786.59
11/9/2007	121.3	122.1	2799.24	51.65	54.8	2794.76	104	104.6	2799.34	8.75	28.3	2786.36
9/27/2007	119.12	122.1	2801.42	51.75	54.8	2794.66	103.12	104.6	2800.22	7.22	28.3	2787.89
5/8/2007	107.64	122.1	2812.9	49.57	54.8	2796.84	96.18	104.6	2807.16	5.22	28.3	2789.89
11/14/2006	119.21	122.1	2801.33	51.88	54.8	2794.53	102.72	104.6	2800.62	7.96	28.3	2787.15

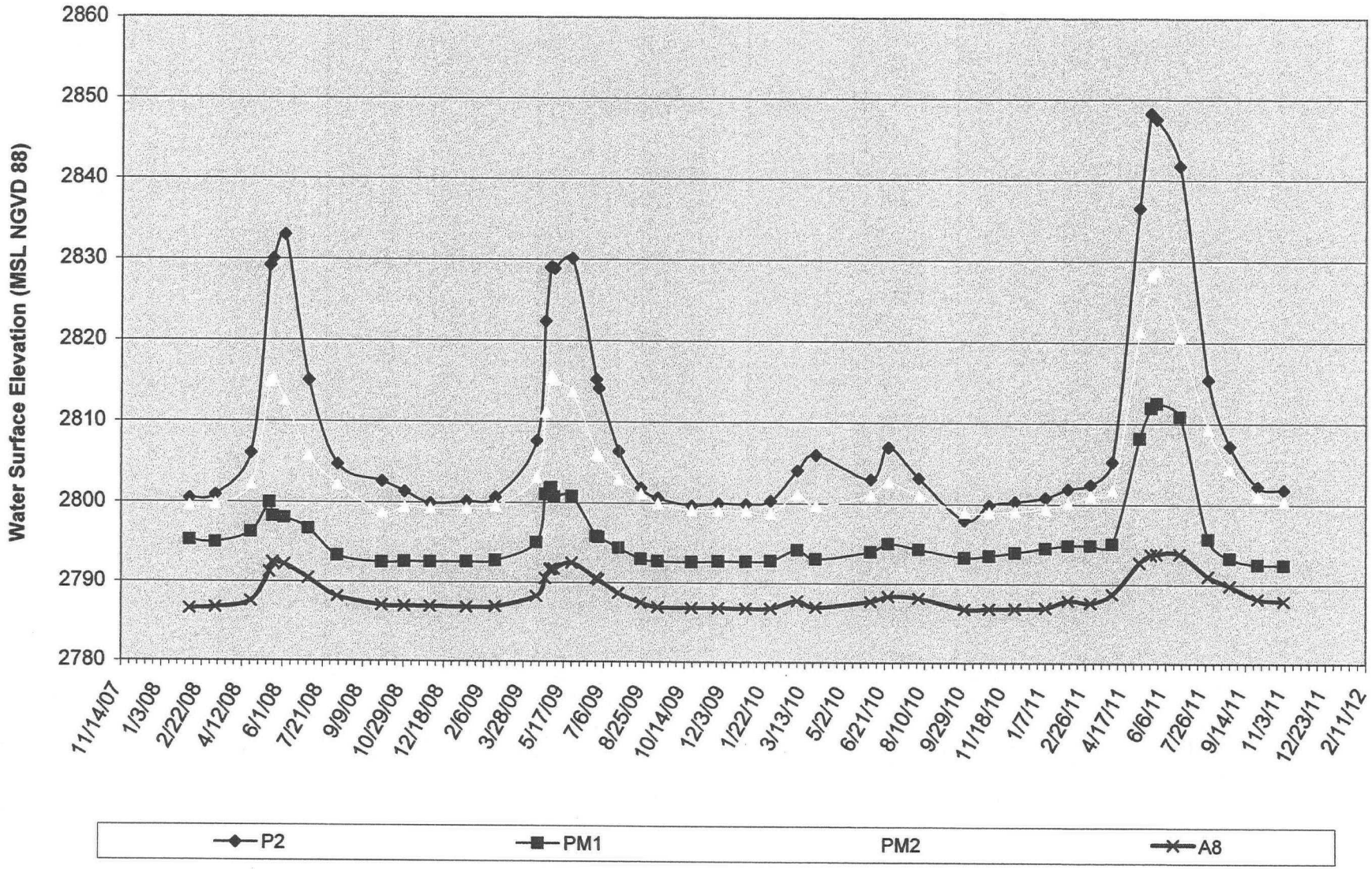
Piezometer Num	P2		Elev.	PM1		Elev.	PM2		Elev.	A8		Elev.
		T.O.C.=	2920.54		T.O.C.=	2846.41		T.O.C.=	2903.34		T.O.C.=	2795.11
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev
10/30/2006	119.48	122.1	2801.06	51.82	54.8	2794.59	103.69	104.6	2799.65	7.92	28.3	2787.19
8/16/2006	119.39	122.1	2801.15	51.72	54.8	2794.69	103.51	104.6	2799.83	7.72	28.3	2787.39
7/28/2006	119.14	122.1	2801.4	51.61	54.8	2794.8	103.32	104.6	2800.02	7.42	28.3	2787.69
6/21/2006	110.89	122.1	2809.65	51.23	54.8	2795.18	101.62	104.6	2801.72	6.18	28.3	2788.93
5/27/2006	109.78	122.1	2810.76	50.76	54.8	2795.65	98.92	104.6	2804.42	4.98	28.3	2790.13
4/7/2006	114.34	122.1	2806.2	51.14	54.8	2795.27	99.79	104.6	2803.55	4.96	28.3	2790.15
3/12/2006	119.52	122.1	2801.02	51.62	54.8	2794.79	103.39	104.6	2799.95	6.18	28.3	2788.93
2/24/2006	119.44	122.1	2801.1	51.95	54.8	2794.46	103.79	104.6	2799.55	7.92	28.3	2787.19
10/27/2005	119.41	122.1	2801.13	51.94	54.8	2794.47	103.76	104.6	2799.58	7.81	28.3	2787.30
9/10/2005	119.32	122.1	2801.22	51.84	54.8	2794.57	103.66	104.6	2799.68	7.76	28.3	2787.35
8/27/2005	119.3	122.1	2801.24	51.78	54.8	2794.63	103.14	104.6	2800.2	7.68	28.3	2787.43
7/14/2005	119.22	122.1	2801.32	51.74	54.8	2794.67	103.46	104.6	2799.88	7.28	28.3	2787.83
6/24/2005	112.79	122.1	2807.75	51.68	54.8	2794.73	103.29	104.6	2800.05	6.22	28.3	2788.89
6/29/2005	119.42	122.1	2801.12	50.92	54.8	2795.49	103.01	104.6	2800.33	5.91	28.3	2789.20
4/10/2005	119.7	122.1	2800.84	51.72	54.8	2794.69	103.32	104.6	2800.02	5.42	28.3	2789.69
3/19/2005	119.82	122.1	2800.72	51.82	54.8	2794.59	103.49	104.6	2799.85	7.79	28.3	2787.32
2/13/2005	119.86	122.1	2800.68	51.87	54.8	2794.54	103.54	104.6	2799.8	7.86	28.3	2787.25
11/19/2004	119.9	122.1	2800.64	51.91	54.8	2794.5	103.59	104.6	2799.75	7.96	28.3	2787.15
10/17/2004	119.89	122.1	2800.65	51.84	54.8	2794.57	103.52	104.6	2799.82	7.91	28.3	2787.20
9/24/2004	119.91	122.1	2800.63	51.81	54.8	2794.6	103.49	104.6	2799.85	7.82	28.3	2787.29
8/17/2004	119.84	122.1	2800.7	51.79	54.8	2794.62	103.34	104.6	2800	7.79	28.3	2787.32
7/22/2004	119.21	122.1	2801.33	51.72	54.8	2794.69	103.29	104.6	2800.05	7.42	28.3	2787.69
6/18/2004	116.8	122.1	2803.74	50.69	54.8	2795.72	102.14	104.6	2801.2	7.01	28.3	2788.10
5/25/2004	115.14	122.1	2805.4	50.95	54.8	2795.46	101.34	104.6	2802	6.55	28.3	2788.56
3/19/2004	119.74	122.1	2800.8	51.68	54.8	2794.73	101.46	104.6	2801.88	7.8	28.3	2787.31
2/12/2004	119.45	122.1	2801.09	51.82	54.8	2794.59	103.52	104.6	2799.82	7.8	28.3	2787.31
12/10/2003	119.44	122.1	2801.1	51.86	54.8	2794.55	103.54	104.6	2799.8	7.91	28.3	2787.20
11/19/2003	119.72	122.1	2800.82	51.84	54.8	2794.57	103.59	104.6	2799.75	7.9	28.3	2787.21
10/21/2003	119.32	122.1	2801.22	51.84	54.8	2794.57	103.54	104.6	2799.8	7.94	28.3	2787.17
9/23/2003	119.51	122.1	2801.03	51.76	54.8	2794.65	103.49	104.6	2799.85	7.7	28.3	2787.41

Piezometer Num	P2		Elev.	PM1		Elev.	PM2		Elev.	A8		Elev.
		T.O.C.=	2920.54		T.O.C.=	2846.41		T.O.C.=	2903.34		T.O.C.=	2795.11
Date	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev	DW	TD	WS Elev
8/26/2003	119.42	122.1	2801.12	51.62	54.8	2794.79	103.42	104.6	2799.92	7.68	28.3	2787.43
7/29/2003	119.16	122.1	2801.38	51.58	54.8	2794.83	103.38	104.6	2799.96	7.39	28.3	2787.72
6/14/2003	101.34	122.1	2819.2	50.62	54.8	2795.79	101.23	104.6	2802.11	6.22	28.3	2788.89
5/30/2003	103.62	122.1	2816.92	49.67	54.8	2796.74	94.67	104.6	2808.67	4.62	28.3	2790.49
4/28/2003	112.74	122.1	2807.8	50.02	54.8	2796.39	97.48	104.6	2805.86	3.41	28.3	2791.70
3/28/2003	119.62	122.1	2800.92	51.99	54.8	2794.42	102.91	104.6	2800.43	6.21	28.3	2788.90
2/24/2003	119.82	122.1	2800.72	52.74	54.8	2793.67	103.9	104.6	2799.44	7.62	28.3	2787.49
12/18/2002	119.34	122.1	2801.2	51.74	54.8	2794.67	103.36	104.6	2799.98	7.77	28.3	2787.34
9/30/2002	119.28	122.1	2801.26	51.55	54.8	2794.86	103.12	104.6	2800.22	7.22	28.3	2787.89
7/31/2002	111.72	122.1	2808.82	50.54	54.8	2795.87	98.87	104.6	2804.47	5.46	28.3	2789.65
6/28/2002	91.22	122.1	2829.32	48.82	54.8	2797.59	89.63	104.6	2813.71	2.62	28.3	2792.49

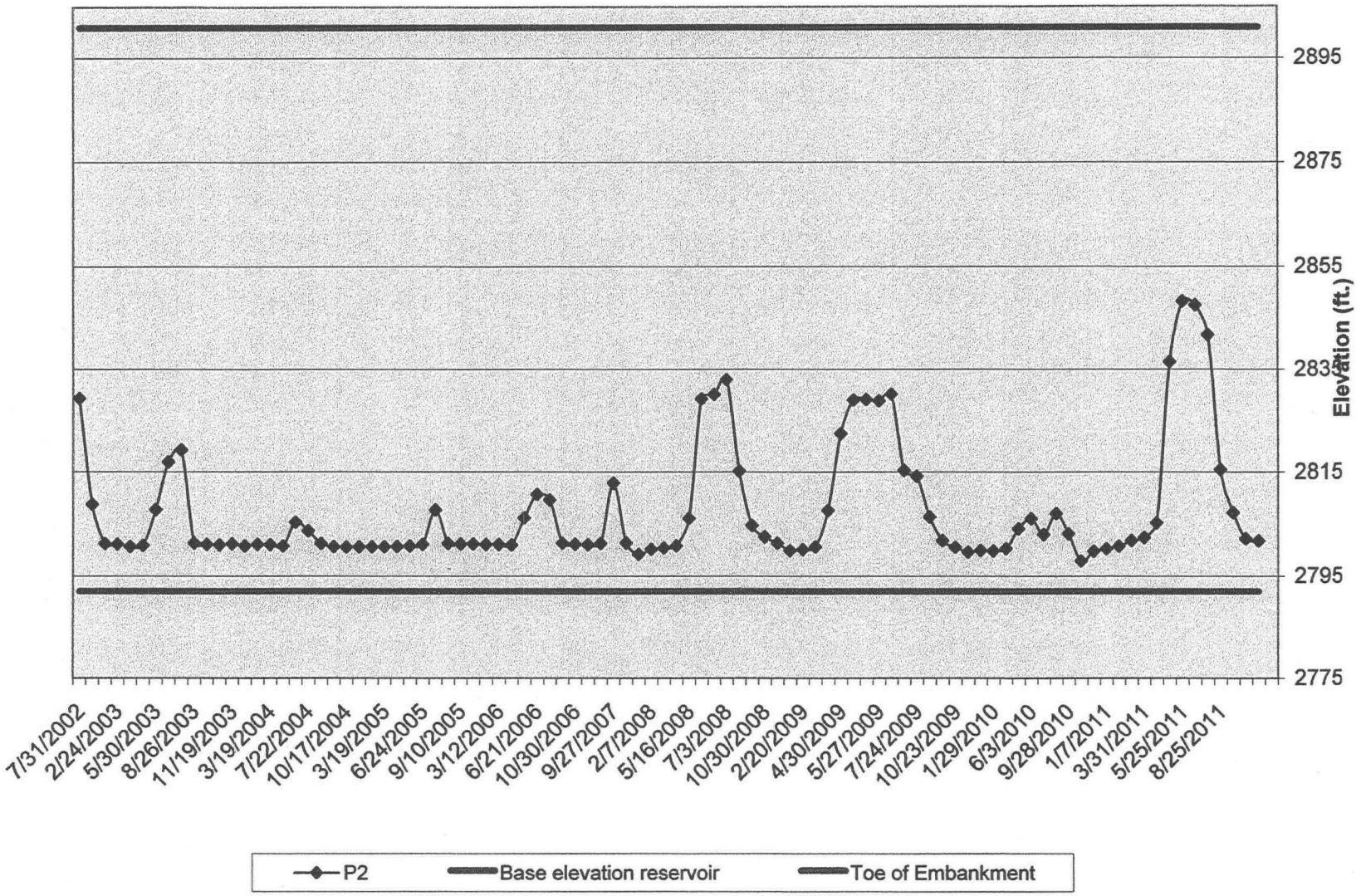
KDID Piezometers 2002 to 2011
with
Reservoir Level and Toe of Embankment



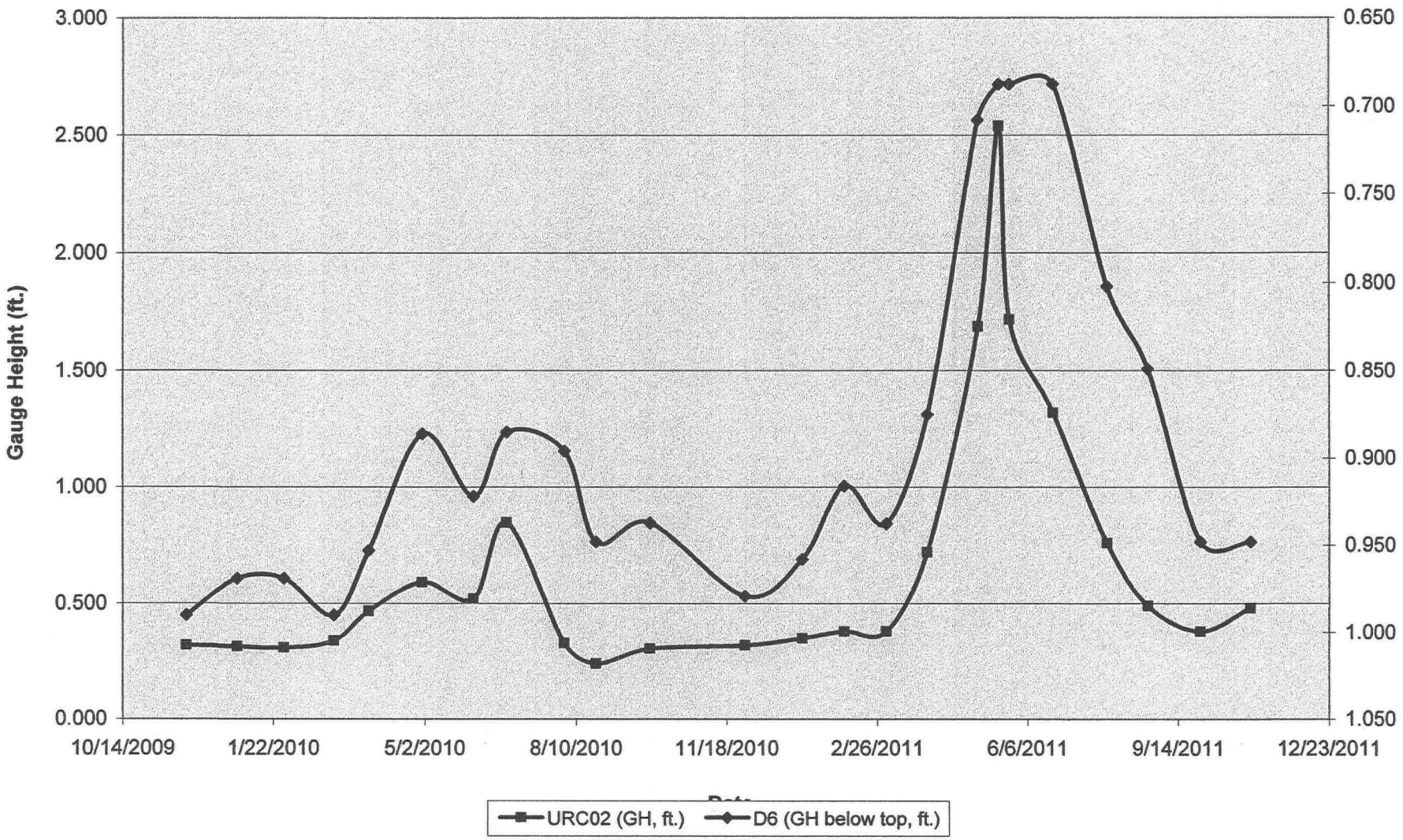
KDID All "Wet" Piezometer Elevations 2008 - 2011



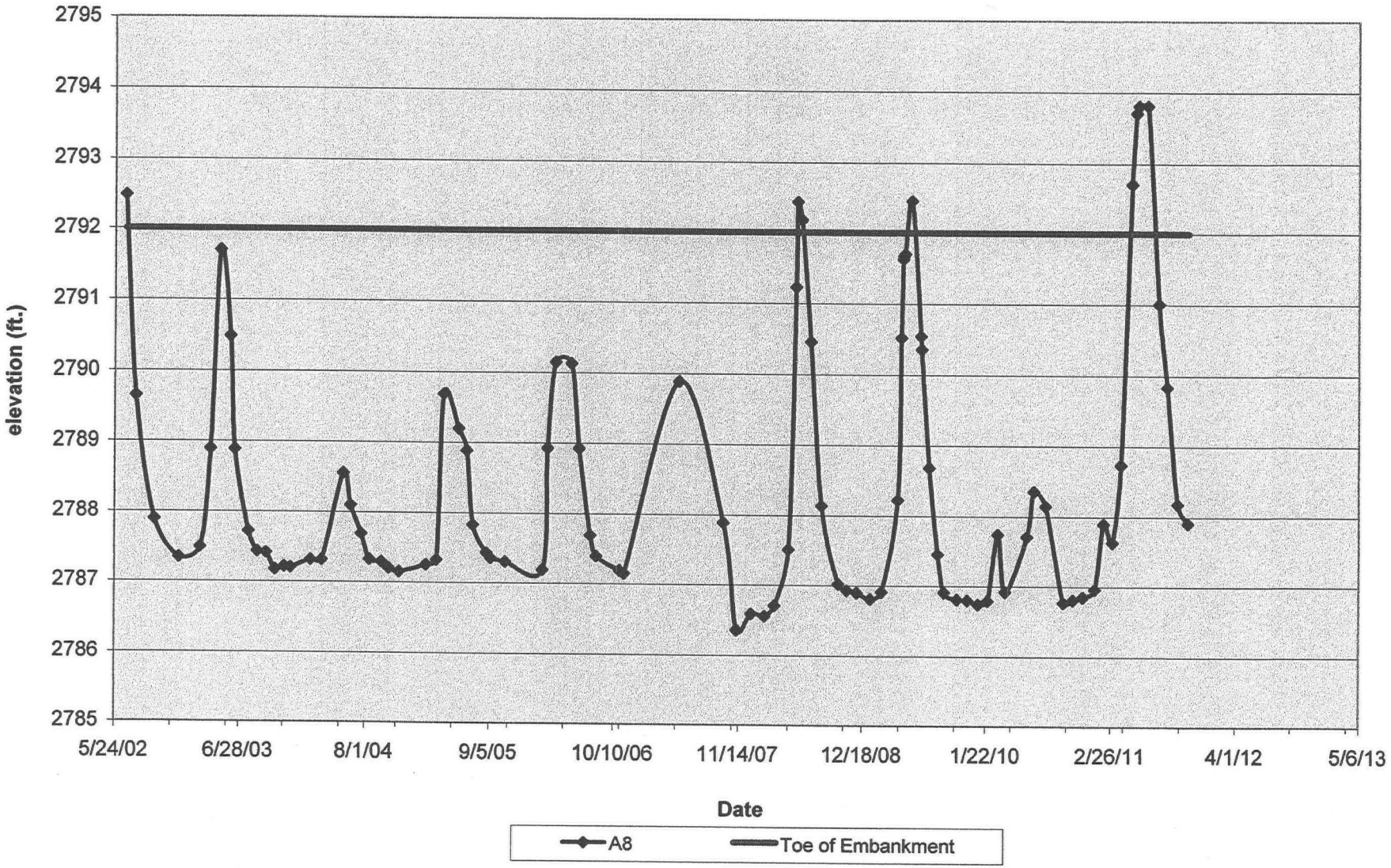
KDID P2 and Base reservoir and Embankment Toe 2002 to 2011

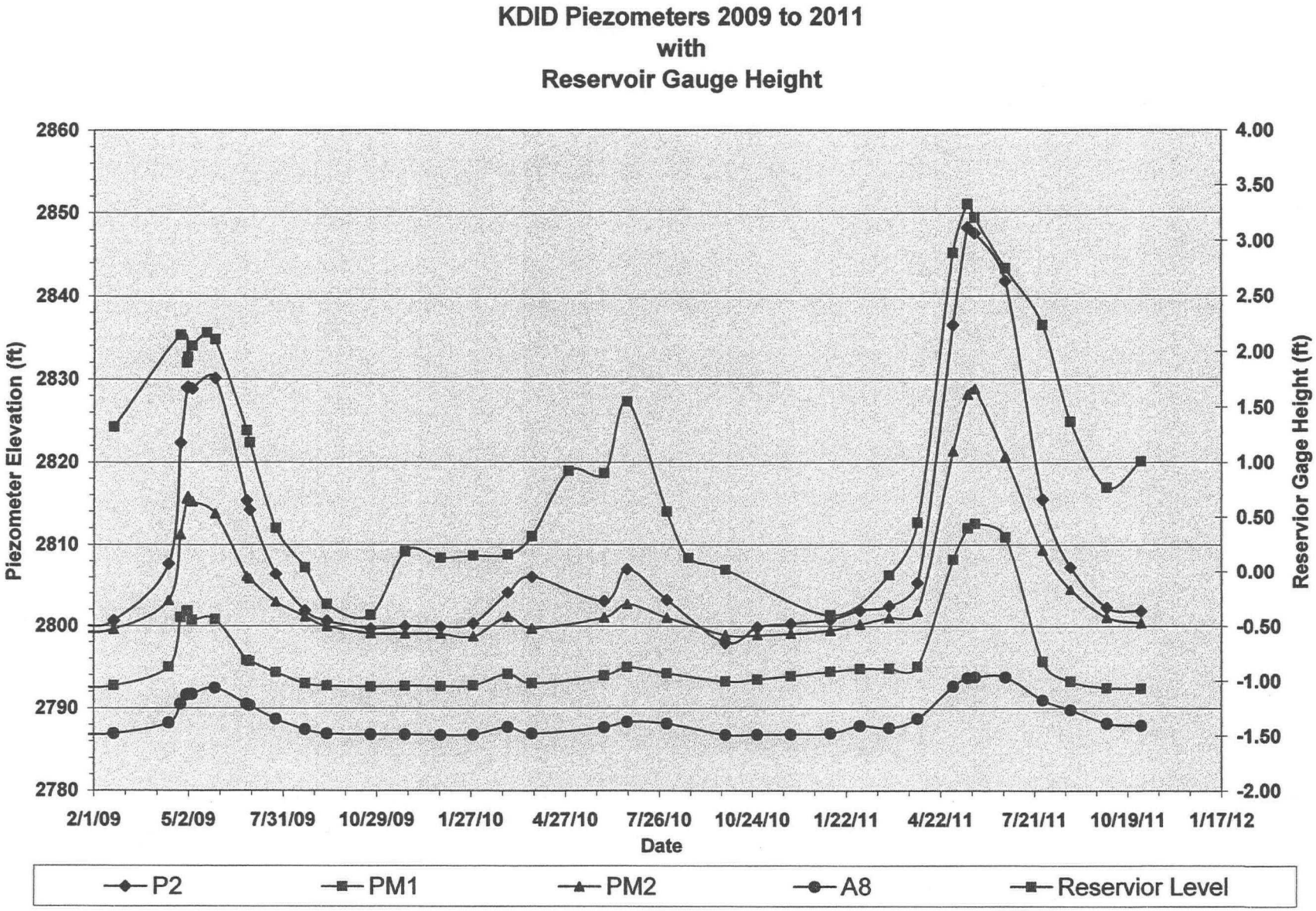


KDID Inflow at Upper Rainy Creek and Drian 6 Comparision

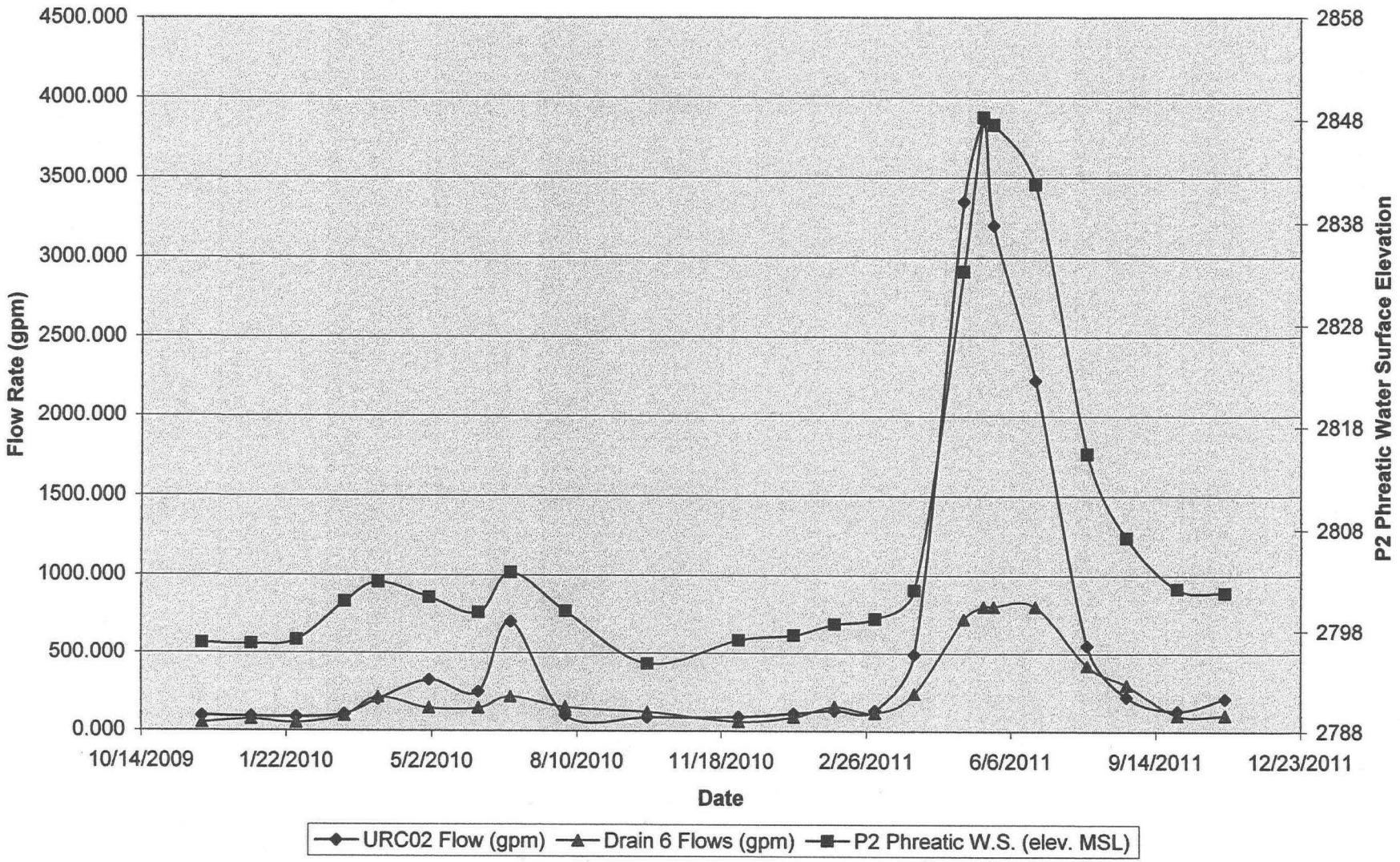


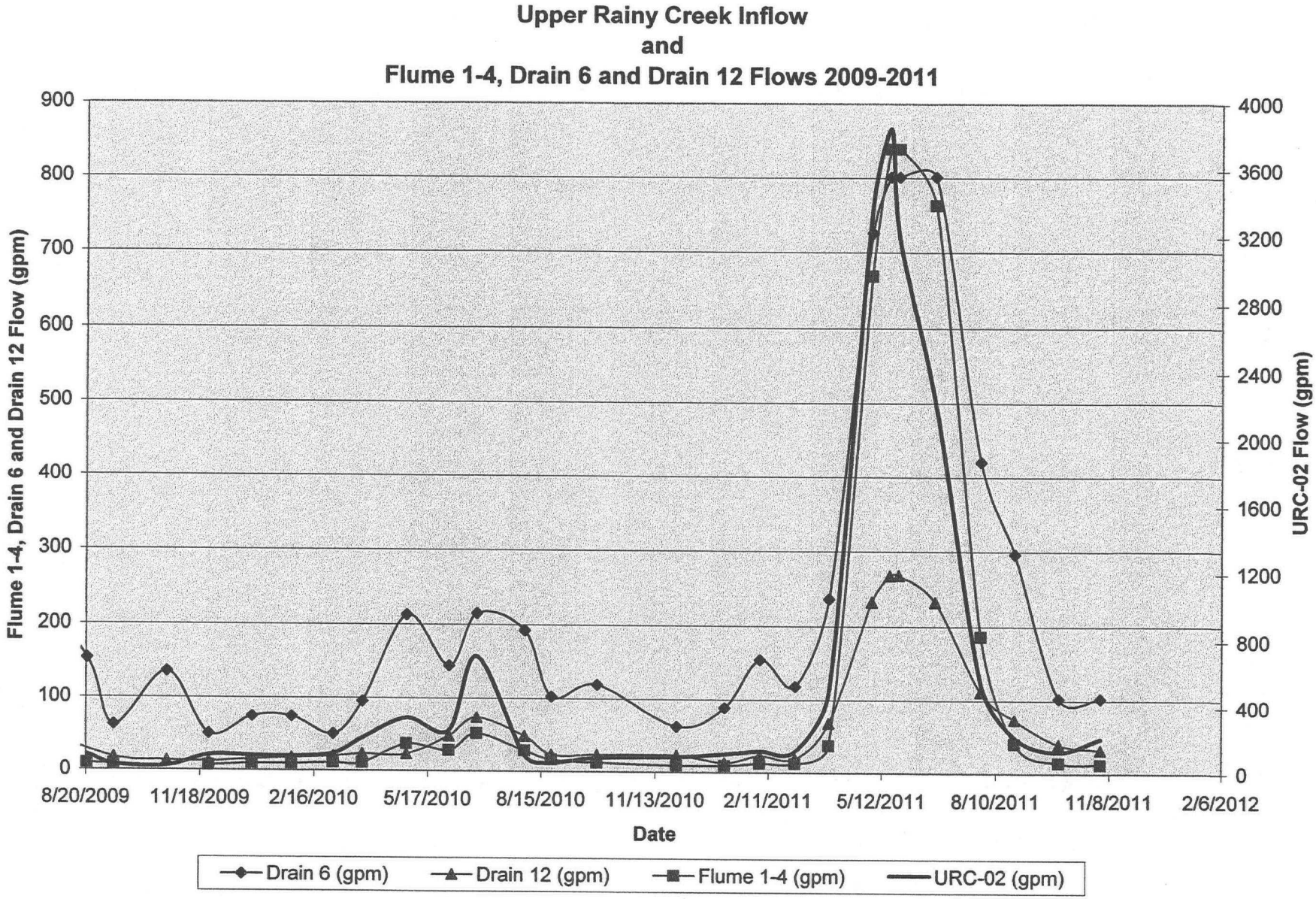
KDID Piezometer A8 at the Toe of the Embankment




KDID Piezometers 2009 to 2011
with
Reservoir Gauge Height
Piezometer Elevation (ft)
Reservior Gage Height (ft)
2860
2850
2840
2830
2820
2810
2800
2790
2780
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
-0.50
-1.00
-1.50
-2.00
2/1/09
5/2/09
7/31/09
10/29/09
1/27/10
4/27/10
7/26/10
10/24/10
1/22/11
4/22/11
7/21/11
10/19/11
1/17/12
Date
P2
PM1
PM2
A8
Reservior Level

URC02 Inflows, Drain 6 Outflow and Piezometer P2




Upper Rainy Creek Inflow
and
Flume 1-4, Drain 6 and Drain 12 Flows 2009-2011
Flume 1-4, Drain 6 and Drain 12 Flow (gpm)
URC-02 Flow (gpm)
900
800
700
600
500
400
300
200
100
0
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
8/20/2009
11/18/2009
2/16/2010
5/17/2010
8/15/2010
11/13/2010
2/11/2011
5/12/2011
8/10/2011
11/8/2011
2/6/2012
Date
Drain 6 (gpm)
Drain 12 (gpm)
Flume 1-4 (gpm)
URC-02 (gpm)